

BNCOC STUDENT PACKAGE 3



Stand Alone Common Core

THIS PAGE INTENTIONALLY LEFT BLANK

BNCOC STUDENT PACKAGE 3

PFN	Table of Contents
T341	Casualty Evacuation
W323	Troop Leading Procedures
W325	Squad Tactical Operations
W321	Graphics and Overlays
W322	Plans, Orders, and Annexes

THIS PAGE INTENTIONALLY LEFT BLANK

HANDOUTS FOR LESSON 1 T341 version 1

**This Appendix
Contains**

This appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet.	SH-1-1
SH-2, Extracted material from FM 8-10-6, Chapters 1 and 7.	SH-2-1 thru SH-2-21
SH-3, Extracted material from FM 4-25.11, Appendix B.	SH-3-1 thru SH-3-28
SH-4, Extracted material from FM 7-10, para 8-13 thru 8-17.	SH-4-1 thru SH-4-6
SH-5, Extracted material from STP 21-24-SMCT.	SH-5-1 thru SH-5-4

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 1

Advance Sheet

Lesson Hours This lesson consists of 1 hour of small group instruction and a 30 minute Practical Exercise.

Overview This 2 hour lesson covers the information you will need to conduct casualty evacuations.

Learning Objective Terminal Learning Objective (TLO):

Action:	Perform procedures for casualty evacuation.
Condition:	As a small unit leader in a company or battalion level unit, in a classroom environment, given FM 8-10-6, FM 4-25.11 and FM 7-10, Chapter 8.
Standard:	Performed procedures for casualty evacuation by: <ul style="list-style-type: none"> • Determining the difference between medical evacuation and casualty evacuation. • Identifying rescue and transportation procedures. • Administering evacuation request procedures. IAW FM 8-10-6, Chapters 1 and 7, FM 4-25.11, App B, and FM 7-10, Chapter 8.

ELO A Determine the difference between medical evacuation and casualty evacuation

ELO B Identify rescue and transportation procedures

ELO C Administer evacuation request procedures

Assignment The student assignments for this lesson are:

- Read FM 8-10-6, Chapters 1 and 7, (SH-2).
 - Study FM 4-25.11, App B, (SH-3).
 - Read FM 7-10, Chapter 8 (SH-4).
 - Complete the Practical Exercise.
-

Additional Subject Area Resources None

Bring to class You must bring the following items to class:

- All reference material received for this class.
 - Writing material.
-

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 2

Extracted material from FM 8-10-6

This student handout contains 21 pages of extracted material from the following publication:

FM 8-10-6, MEDICAL EVACUATION IN A THEATER OF OPERATIONS, 14 Apr 2000.

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 1

**INTRODUCTION TO THE COMBAT HEALTH SUPPORT
SYSTEM AND MEDICAL EVACUATION****1-1. General**

a. The purpose of the CHS system is to conserve the fighting strength. This includes both the deployed force and the sustaining base. Consistent with military and logistical operations, CHS operates in a continuum across strategic, operational, and tactical levels. In a force projection army, the CHS system supports a force which is rapidly deployable, lethal, versatile, and expandable. The Force XXI battle space will be characterized by dispersion, lightning-quick military operations, increased mobility requirements, rapid task organization, and lengthening lines of communication (LOC). The CHS system must be strategically, operationally, and tactically agile in order to be responsible to the broad range of worldwide requirements.

b. Medical commanders must effectively use their resources to treat, evacuate, and, when possible, return to duty (RTD) sick, injured, and wounded soldiers.

1-2. Threat

a. The post-Cold War international environment presents the US with security challenges that are unprecedented in ambiguity, diversity, risk, and opportunity. For many decades, nearly all US intelligence analysis was directed toward one country. The Soviet strategic doctrine and tactics for conducting offensive and defensive operations were well understood and confident estimates of Soviet weapons capabilities existed. Further, during the Cold War, the US National Security Strategy carefully rationed the use of military force to only those conflicts which promoted democracy over communism. The world was a dangerous place, but the superpowers were held in check by the knowledge that each had the capability to destroy the planet.

b. The end of the Cold War signaled the emergence of a “New World Order.” Unfortunately, reality has proven that this new order is neither new nor orderly. The old forces of adventurism, nationalism, and separatism have reappeared, often with violent and unpredictable consequences. Coupled with this is a new National Security Strategy, still in its infancy, which allows for US military involvement in complicated scenarios such as peacemaking operations, nation assistance, and humanitarian assistance.

c. With the diminished threat of a large-scale military confrontation, military force size and capabilities are being affected in countries throughout the world. Many of the major military powers are moving toward smaller, better-equipped, and better-trained forces. Developed nations have also improved military capabilities through greater access to military system technologies and the increased availability of a wide range of advanced military equipment on the international market. How well these nations are able to integrate advanced weapons systems for a high technology status may increase their leverage over another regional power. While high technology weapons will be available, either through direct purchase or through third party countries, many hostile forces, especially paramilitary or insurgent forces, will maintain a low technology inventory. This low technology weapons environment does not translate into a low threat environment for US forces. Small hostile forces often demonstrate a creativity and flexibility for

use of low technology weapons that is unexpected, thereby compounding the problems associated with assessing their capabilities. The implication for the US Army is clear. United States forces must be continually prepared to face a variety of threat forces, many with credible military capabilities.

d. The Army Medical Department (AMEDD) views threat from two perspectives. Both viewpoints are rooted in a potential adversary's capability to conduct combat operations. The first of these viewpoints is similar to the way threat is viewed in the Army. This is a potential adversary's capability to disrupt CHS operations on the battlefield. The second is the AMEDD's responsibility to anticipate and prevent the degradation of soldiers' performance by diseases, environmental hazards, and military capabilities. This second perspective is called the *medical threat*. Soldiers are the targets of these threats. Weapons or environmental conditions that will generate casualties beyond the capability of the CHS system are considered to be significant medical threats. (The medical threat is further discussed in paragraph 1-3.)

e. For a discussion of CHS operations in stability operations and support operations, refer to FM 8-42.

1-3. Medical Threat and Medical Intelligence

a. The medical threat is a composite of all ongoing or potential enemy actions and environmental conditions that may render a soldier combat ineffective. The soldier's reduced effectiveness results from sustained wounds, injuries, stress-induced performance deterioration, or diseases. The elements of the medical threat include—

- Diseases endemic to the area of operations (AO).
- Environmental factors (heat, cold, humidity, and high altitude).
- Battle injuries.
- Biological warfare (BW) agents.
- Chemical warfare (CW) agents.
- Directed-energy (DE) sources.
- Blast effect munitions.
- Flame and incendiary weapons.
- Nuclear weapons.
- Toxic industrial materiel/chemicals (to include radioactive material).
- Combat stress and continuous operations.

- Level of compliance with the Law of Land Warfare and the Geneva Conventions (Appendix A) requirements regarding *respect and protection* of medical personnel and their patients, MTFs, and medical vehicles and aircraft.

b. In order to develop the CHS estimate and plan (Appendix B), the CHS planner obtains updated medical intelligence through intelligence and other channels. Medical intelligence is the product resulting from the collection, evaluation, and analysis, integration, and interpretation of all available general health and bioscientific information. Medical intelligence is concerned with one or more aspects of foreign nations or the AO. Until medical information is processed (ordinarily at the national level by the Armed Forces Medical Intelligence Center [AFMIC]), it is not considered to be intelligence.

c. For additional information on medical intelligence, refer to FM 8-10-8.

1-4. Medical Evacuation Versus Casualty Evacuation

a. Medical evacuation is the timely, efficient movement and en route care by medical personnel of the wounded, injured, or ill persons from the battlefield and/or other locations to MTFs. The provision of en route care on medically equipped vehicles or aircraft enhances the patient's potential for recovery and may reduce long-term disability by maintaining the patient's medical condition in a more stable manner.

(1) The gaining MTF is responsible for arranging for the evacuation of patients from the lower echelon of care. For example, Echelon II medical units are responsible for evacuating patients from Echelon I MTFs.

(2) Medical evacuation begins when medical personnel receive the wounded, injured, or ill soldier and continues as far rearward as the patient's medical condition warrants or the military situation requires.

b. Casualty evacuation (CASEVAC) is a term used by nonmedical units to refer to the movement of casualties aboard nonmedical vehicles or aircraft.

CAUTION

Casualties transported in this manner do not receive en route medical care; if the casualty's medical condition deteriorates during transport, an adverse impact on his prognosis and long-term disability may result.

(1) If dedicated medical vehicles or aircraft are available, casualties should be evacuated on these conveyances to ensure they receive en route medical care.

(2) If available medical evacuation resources are overwhelmed (such as in a mass casualty situation), some casualties (usually with minimal or nonlife-threatening injuries) may be required to be transported on nonmedical vehicles. Medical personnel on-site will determine the priority for evacuation by available medical vehicles and aircraft.

NOTE

When possible, nonmedical vehicles/aircraft transporting casualties should be augmented with a combat medic or combat lifesaver. (On nonmedical aircraft, sufficient space may not be available to permit a caregiver to accompany the casualties.) The type of en route surveillance and medical care/first aid provided is limited by the following factors:

- Skill level of the individual providing care.

(The combat medic is military occupational specialty [MOS]-qualified to provide emergency medical treatment [EMT]; the combat lifesaver is trained to provide enhanced first aid.) The combat medic can provide emergency medical intervention, whereas the combat lifesaver can only monitor the casualty and ensure that the basic lifesaving first-aid tasks are accomplished.

- Equipment available.
- Number of casualties being transported.
- Accessibility of the casualties. (If the nonmedical ground vehicle is loaded with the maximum number of casualties, the combat medic/combat lifesaver will not be able to attend to the casualties while the vehicle is moving. At best, if the condition of a casualty deteriorates and emergency measures are required, the vehicle will have to be stopped to permit care to be given.)

1-5. Theater Evacuation Policy

a. The theater evacuation policy is established by the Secretary of Defense, with the advice of the Joint Chiefs of Staff and upon the recommendation of the theater commander. The policy establishes, in number of days, the maximum period of noneffectiveness (hospitalization and convalescence) that patients may be held within the theater for treatment. This policy does not mean that a patient is held in the TO for the entire period of noneffectiveness. A patient who is not expected to be ready for RTD within the number of days established in the theater evacuation policy is evacuated to the CONUS or other safe haven. This is done providing that the treating physician determines that such evacuation will not aggravate the patient's

disabilities or medical condition. For example, a theater evacuation policy of 15 days does not mean that a patient is held in the theater for 14 days and then evacuated. Instead, it means that a patient is evacuated as soon as possible after the determination is made that he cannot be returned to duty within 15 days following admission to an Echelon III or above hospital.

b. To the degree that unplanned for increases in patients occur (due perhaps to an epidemic or heavy combat casualties), a temporary reduction in the policy may be necessary. This reduction is used to adjust the volume of patients being held in the TO hospital system. A reduction in the evacuation policy increases the number of patients requiring evacuation out-of-theater and increases the requirement for evacuation assets. This action is necessary to relieve the congestion caused by the patient increases. A decrease in the theater evacuation policy increases the evacuation asset requirements.

c. The time period established by the theater evacuation policy starts on the date the patient is admitted to the first hospital (combat zone [CZ] or echelons above corps [EAC]). The total time a patient is hospitalized in the theater (including transit time between MTFs) for a single, uninterrupted episode of illness or injury should not exceed the number of days stated in the theater evacuation policy. Though guided by the evacuation policy, the actual selection of a patient for evacuation is based on clinical judgment as to the patient's ability to tolerate and survive the movement to the next echelon of hospitalization. An exception to the theater evacuation policy may be required with respect to special operations forces (SOF) personnel. This exception may be required to retain low density MOS skills within the theater. Retaining these personnel within the theater for an extended period of time is possible if the medical resources are available within the theater to treat their injuries and provide for convalescence and rehabilitation. If retention within the theater would result in a deterioration of their medical condition or would adversely impact on their prognosis for full recovery, they are evacuated from the theater for definitive care.

d. The evacuation policy has different meanings for different personnel. For example, to the—

(1) Physicians and dentists engaged in direct patient treatment and decisions relating to patient disposition, it means that there is a maximum period within which clinical staffs may complete the necessary treatment needed to return the patient to full duty within the theater. If the theater policy is 15 days and full RTD can be predicted within that time, the patient is retained in the theater hospital system. If the patient cannot be returned to full duty within 15 days, the patient is evacuated out-of-theater as early as clinically prudent.

(2) Combat health support planner, it means that he can compute the beds required in theater, if given the theater evacuation policy and other factors. This can be translated into the type, mix, number, and distribution of hospital beds required in the theater.

(3) Nonmedical logistician, it means, in part, that he can estimate his total obligation to support this system.

(4) United States Air Force (USAF) planner, it means that he can accurately plan the USAF aeromedical evacuation (AE) requirements for both intra- and intertheater patient movements.

(5) Combat health support operator, it means that he has a management tool which, when properly adjusted and used, provides the balance between patient care and tactical support requirements. The CHS operator is able to tailor a CHS package specifically designed to handle the patient workloads, with maximum benefit to the patients and with maximum economy of available resources.

1-6. Factors Determining the Evacuation Policy

To fully understand how the theater evacuation policy affects CHS operations, the CHS operator should be aware of the factors that influence the establishment of this policy. The following factors are used in determining the evacuation policy:

a. Nature of Tactical Operations. A major factor is the nature of the combat operations. Will they be operations of short duration and with a low potential for violence? Will they be operations of long duration with significant combat operations? Will weapons of mass destruction (WMD) (to include nuclear, biological, and chemical [NBC] or DE weapons) be employed? Will only conventional weapons be used? Is a static combat situation expected? Is there a significant threat of terrorist activities? Are the majority of patients anticipated to be disease and nonbattle injury (DNBI) patients or those with combat-related trauma?

b. Number/Type of Patients. Another factor is the number and types of patients anticipated and the rate of patient RTD. Admission rates vary widely in different geographical areas of the world and in different types of military operations.

c. Evacuation Means. The means (quantity and type of transportation) available for evacuation of patients from the TO to CONUS is an essential factor impacting on the evacuation policy.

d. Availability of Replacements. The capability of CONUS to furnish replacements to the theater is another consideration. For each patient who is evacuated from the theater to CONUS, a fully trained and equipped replacement must be provided. During a small-scale conflict overseas, the CONUS replacement capability is much greater than when compared to a large-scale conflict such as World War II.

e. Availability of In-Theater Resources. Limitations of all CHS resources (such as insufficient number and types of CHS units in EAC to support the CZ and an insufficient amount of combat health logistics [CHL] and nonmedical logistics) will have an impact on the theater evacuation policy. The availability, type, and timing of engineering support is also a consideration. The more limitations (or shortages), the shorter the theater evacuation policy.

1-7. Impact of Evacuation Policy on Combat Health Support Requirements

a. A short theater evacuation policy—

- Results in fewer hospital beds required in the theater and a greater number of beds required elsewhere.

- Creates a greater demand for intertheater USAF evacuation resources. (A shortened intratheater evacuation policy would likewise increase the number of airframes required in the theater.)

- Increases the requirements for replacements to meet the rapid personnel turnover which could be expected, especially in combat units. (The impact this would have on both intra- and intertheater transportation and other requirements must also be considered.)

b. A longer theater evacuation policy—

- Results in a greater accumulation of patients and a demand for a larger CHS infrastructure in the theater. It decreases bed requirements elsewhere.

- Increases the requirements for CHL (medical supplies and equipment and medical maintenance) and nonmedical logistics support.

- Increases the requirements for hospitals, engineer support, and all aspects of base development for CHS. (It demands the establishment of a larger number of hospitals in EAC.)

- Provides for a greater proportion of patients to RTD within the theater, and thus reduces the loss of experienced manpower.

c. The evacuation policy has no impact on the patient stabilization period for movement. This period is known as the *evacuation delay*. It is the period of time planned for between the time of patient reporting and the time of AE of the patient to the next echelon of care. Evacuation delays normally range from 24 to 72 hours and are designated by the theater surgeon.

1-8. Adjustments to the Evacuation Policy

When patients are received at a rather constant rate, the evacuation policy at a specific echelon may be adjusted to retain or RTD those patients who do not require specialized treatment in EAC hospitals. However, when increased patient loads are anticipated, the intratheater evacuation policy must be adjusted to make additional beds available for current and anticipated needs. As a result, a larger proportion of patients admitted in the CZ are evacuated to EAC facilities much earlier than under normal conditions. The displacement of hospitals temporarily reduces the number of beds available and may result in a greater number of patients being evacuated out of the CZ during the period of relocation.

1-9. Planning for Combat Health Support

a. While the *responsibility* for what is or is not done is the tactical commander's alone, he must rely on his staff and his subordinate commanders to execute his decisions. It is imperative that the CHS planner be involved in the initial stages of the planning process. A thorough understanding of the tactical commander's plan is necessary for CHS commanders to maintain CHS to sustain the tactical commander during the absence of orders and communications. Combat health support planning is an intense and demanding process. The planner must know—

FM 8-10-6

- What each supported element will do.
- When it will be done.
- How it will be done.
- What the organic medical capability is of the supported units.

b. The planner must foresee actions beforehand to be able to plan for positive and responsive support to each element supported. He must be prepared to meet the requirements for all of the CHS functional areas. The functional areas are—patient evacuation and medical regulating; hospitalization; medical treatment (to include area medical support); preventive medicine (PVNTMED) services; CHL to include blood management; medical laboratory services; dental services; veterinary services; combat stress control (CSC); and command, control, communications, computers, and intelligence (C4I).

c. Planning must be proactive rather than reactive. Commanders must be able to allocate CHS resources as tactical situations change.

d. On the integrated battlefield, medical units can anticipate situations in which large numbers of patients are produced in a relatively short period of time. These mass casualty situations will exceed local CHS capabilities. (Refer to FM 8-10-1 for an in-depth discussion on mass casualty operations.)

e. For additional information on CHS planning, refer to FMs 8-42, 8-55, and 101-5 and Appendix B of this manual.

1-10. Echelons of Medical Care

Combat health support is arranged in *echelons of care*. Each echelon reflects an increase in medical capabilities while retaining the capabilities found in the preceding echelon.

a. Echelon I. The first medical care a soldier receives is provided at Echelon I (also referred to as unit-level medical care). This echelon of care includes—

- Immediate lifesaving measures.
- Disease and nonbattle injury prevention.
- Combat stress control preventive measures.
- Patient collection.
- Medical evacuation from supported units to supporting MTFs.
- Treatment provided by designated combat medics or treatment squads (battalion aid stations [BASs]) in conventional forces. In Army special operations forces (ARSOF), Echelon I treatment

is provided by special operations combat medics (SOCMs), special forces medical sergeants (SFMSs), or physicians or physician assistants (PAs) at forward operating bases (FOBs), special forces (SF) operating bases (SFOB), or in joint special operations task force (JSOTF) areas of responsibility (AOR). (Major emphasis is placed on those measures necessary for the patient to RTD, or to stabilize him and allow for his evacuation to the next echelon of care. These measures include maintaining the airway, stopping bleeding, preventing shock, protecting wounds, immobilizing fractures, and performing other emergency measures, as indicated.)

(1) The combat medic is assisted in his duties by nonmedical personnel performing first-aid procedures. First aid is administered by an individual (self-aid, buddy aid) and by the combat lifesaver.

(a) *Self-aid and buddy aid.* Each individual soldier is trained to be proficient in a variety of specific first-aid procedures. These procedures include aid for chemical casualties with particular emphasis on lifesaving tasks. This training enables the soldier or a buddy to apply first aid to alleviate a life-threatening situation.

(b) *Combat lifesaver.* The combat lifesaver is a member of a nonmedical unit selected by the unit commander for additional training beyond basic first-aid procedures. A minimum of one individual per squad, crew, team, or equivalent-sized element should be trained. The primary duty of this individual does not change. The additional duty of the combat lifesaver is to provide enhanced first aid for injuries (based on his training) before the combat medic arrives. The combat lifesaver's training is normally provided by medical personnel assigned, attached, or in direct support (DS) of the unit. The training program is managed by the senior medical person designated by the commander. Members of SF operational detachment A (ODA) teams receive enhanced first-aid training at the combat lifesaver level.

(2) Echelon I medical treatment is provided by the combat medic or by the physician, PA, or medical specialist in the BAS.

(a) Emergency medical treatment (immediate far forward care) consists of those lifesaving steps that do not require the knowledge and skill of a physician. The combat medic is the first individual in the CHS chain who makes medically substantiated decisions based on medical MOS-specific training. (The SFMS receives more advanced training than the conventional force combat medic, as the SFMS may be required to maintain patients for longer periods of time under austere conditions.)

(b) The physician and the PA in a treatment squad are trained and equipped to provide advanced trauma management (ATM) to the battlefield casualty. This element also conducts routine sick call when the tactical situation permits. Like elements provide this echelon of medical care to division, corps, and EAC units.

(c) Echelon I care is provided by—

- Medical platoons/sections of combat and combat support (CS) battalions/squadrons.
- Divisional medical companies.

- Corps and EAC area support medical companies (ASMCs).
- Special forces medical sergeants, PAs, and physicians assigned to special forces groups (SFGs), special operations support battalions (SOSBs), and SOCMs, PAs, and physicians assigned to Ranger regiments.

b. Echelon II. At this echelon, care is rendered at the clearing stations (division or corps) which are operated by the treatment platoon of the medical company. Here the casualty is examined and his wounds and general status evaluated to determine his treatment and evacuation precedence, as a single casualty among other casualties. Emergency medical treatment, including beginning resuscitation is continued and, if necessary, additional emergency measures are instituted, but they do not go beyond the measures dictated by immediate necessities. The clearing station has a whole blood capability and limited x-ray, laboratory, and dental support. Echelon II CHS also includes PVNTMED and CSC assets in the division (main support medical company [MSMC]) and in the corps (area support medical battalion [ASMB]). Those patients who can RTD within 1 to 3 days are held for treatment. These functions are performed typically by company-sized medical units organic to brigades, divisions, and ASMBs. Patients who are nontransportable due to their medical condition may receive immediate surgical care from a forward surgical team (FST) collocated with a division or corps medical company. (A discussion of the FST is contained in FM 8-10-25.) (Army special operations forces units do not have organic Echelon II resources and are dependent upon theater assets for this echelon of care. Support is provided on an area support basis by the ASMB.)

c. Echelon III. At this echelon, the patient is treated in an MTF staffed and equipped to provide resuscitation, initial wound surgery, and postoperative treatment. Those patients who are expected to RTD within the theater evacuation policy are regulated to a facility that has the capability for reconditioning and rehabilitation.

d. Echelon IV. At Echelon IV, the patient is treated in a hospital staffed and equipped for general and specialized medical and surgical care to stabilize the patient for further evacuation out of the theater, or for reconditioning and rehabilitation prior to RTD.

e. Echelon V. Echelon V medical care is found in support-base hospitals. Mobilization requires expansion of military hospital capacities and the inclusion of Department of Veterans Affairs (VA) and civilian hospital beds in the CHS system to meet the increased demands created by the evacuation of patients from the TO. The support-base hospitals represent the most definitive medical care available within the CHS system.

1-11. Principles of Combat Health Support Operations

a. Conformity. Conformity with the tactical plan is the most fundamental element for effectively providing CHS. Only by participating in the development of the operation plan (OPLAN) can the CHS planner ensure adequate CHS on the battlefield at the right time and place.

b. Continuity. Combat health support must be continuous since the interruption of treatment may cause an increase in morbidity and mortality. Procedures are standardized at each organizational level to

ensure that all required medical treatment at that echelon is accomplished. *No patient is evacuated any farther to the rear than his physical condition or the military situation requires.*

c. Control. Control of CHS resources must rest with the medical commander. Combat health support staff officers must be proactive and keep their commanders apprised of the impact of future operations on CHS assets. The CHS system must be responsive to a rapidly changing battlefield and must support the tactical plan in an effective manner. The medical commander must be able to tailor medical organizations and direct them to focal points of demand throughout his AO. For this reason, CHS units normally maintain unit integrity for command and control (C2). Treatment performed at each echelon of the CHS system must be commensurate with available CHS resources. Since these resources are limited, it is essential that their control be retained at the highest CHS echelon consistent with the tactical situation.

d. Proximity. The location of CHS assets in support of combat operations is dictated by the tactical situation (mission, enemy, terrain, troops, time available, and civilian considerations [METT-TC]) factors, the time and distance factor, and the availability of evacuation resources. The speed with which medical treatment is initiated is extremely important in reducing morbidity and mortality. Medical evacuation time must be minimized by the efficient allocation of resources and the judicious location of MTFs. The MTF cannot be located so far forward that it interferes with the conduct of combat operations or is subjected to enemy interference. Conversely, it must not be located so far to the rear that medical treatment is delayed due to the lengthened evacuation time.

e. Flexibility. Since a change in tactical plans or operations may require redistribution or relocation of medical resources, the CHS plan must be flexible. The medical commander must be able to shift CHS resources to meet the changing requirements. No more medical resources should be committed nor MTFs established than are required to support expected patient densities. When the patient load exceeds the means available for treatment, it may be necessary to give priority to those patients who can RTD the soonest rather than those who are more seriously injured. This ensures the manning of the tactical commander's weapons systems.

f. Mobility. Since contact with supported units must be maintained, CHS elements must have mobility comparable to that of the units they support. Mobility is measured by the extent to which a unit can move its personnel and equipment with organic transportation. When totally committed to patient care, a CHS unit can regain its mobility only by immediate patient evacuation. When the mobility of the unit is jeopardized by the accumulation of patients, it may be necessary to leave a small holding element with the patient.

1-12. Army Medical Department Battlefield Rules

The AMEDD has developed CHS battlefield rules to aid in establishing priorities and in resolving conflicts between competing priorities within CHS activities.

a. These battlefield rules are (in order of their priority) to—

- Maintain a medical presence with the soldier.

- Maintain the health of the command.
- Save lives.
- Clear the battlefield.
- Provide state-of-the-art care.
- Return soldiers to duty as early as possible.

b. These rules are intended to guide the CHS planner to resolve system conflicts encountered in designing and coordinating CHS operations. Although medical personnel seek always to provide the full scope of CHS in the best possible manner, during every combat operation there are inherent possibilities of conflicting support requirements. The planner or operator applies these rules to ensure that the conflicts are resolved appropriately.

c. The rationale for the battlefield rules is based on the prevention of disease and injury and the evolving clinical concept which demonstrates that with good medical care the trauma victim will probably survive the injury.

(1) Good medical care means that the injured soldier receives prompt medical attention; he is adequately resuscitated and stabilized; and stabilization is maintained during evacuation.

(2) The goal of resuscitation and stabilization is the restoration of vascular volume with adequate oxygen delivery to the cells. This means that the patient's bodily systems have available the amount of oxygen demanded to ensure viability. The patient can then be evacuated over a greater distance to a rearward MTF with time being less of a major concern to save life and limb.

(3) Good medical care and stabilization prior to evacuation are major aspects in determining whether the patient survives, provided stabilization is sustained during evacuation. Early medical care with the ability to adequately stabilize the patient must be available with less delay from the time of injury than it has ever been in the past. An enhanced capability to sustain stabilization during evacuation must also be provided.

1-13. Mandated Medical Evacuation Support

When an aircraft is reported down and has sustained damage, a medical evacuation platform (either ground or air) is required to pick up the crew of the aircraft. Initial EMT is provided, if required, and en route medical care sustains the injured crew members during the evacuation.

CHAPTER 7

EVACUATION REQUEST PROCEDURES**7-1. General**

Procedures for requesting medical evacuation support must be institutionalized down to the unit level. Procedural guidance and standardization of request procedures are provided in this chapter. *The same format used to request aeromedical evacuation is also used for requesting ground evacuation.*

7-2. Unit Evacuation Plan

Before initiating any operation, a unit must have an evacuation plan in effect. The plan may be a standard TSOP or it may be designed for a particular operation. It can be published in various ways depending on the level of headquarters and the amount of detail required. For example, it may be in the form of verbal instructions at the squad or platoon level, a comment in the signal operation instructions (SOI), or a paragraph in the unit OPORD. The unit evacuation plan is essential to requesting evacuation because it identifies—

- Primary and alternate channels to be used in submitting the medical evacuation request.
- Primary and alternate evacuation routes to be used.
- Means of evacuation (type of transport such as litter, ground ambulance, or air ambulance) to be used.
- Location of the destination MTF, if predesignated.

This paragraph implements STANAGs 2087 and 3204, QSTAG 529, and Air STDs 44/36A and 61/71.

7-3. Determination to Request Medical Evacuation and Assignment of Medical Evacuation Precedence

The determination to request medical evacuation and assignment of a precedence is made by the senior military person present. This decision is based on the advice of the senior medical person at the scene, the patient's condition, and the tactical situation. Assignment of a medical evacuation precedence is necessary. The precedence provides the supporting medical unit and controlling headquarters with information that is used in determining priorities for committing their evacuation assets. For this reason, correct assignment of a precedence cannot be overemphasized; *overclassification remains a continuing problem*. Patients will be picked up as soon as possible, consistent with available resources and pending missions. The following are categories of precedence and the criteria used in their assignment:

a. Priority I—URGENT is assigned to emergency cases that should be evacuated as soon as possible and within a maximum of 2 hours in order to save life, limb, or eyesight, to prevent complications of serious illness, or to avoid permanent disability.

b. Priority IA—URGENT-SURG is assigned to patients who must receive far forward surgical intervention to save life and to stabilize them for further evacuation.

c. Priority II—PRIORITY is assigned to sick and wounded personnel requiring prompt medical care. This precedence is used when the individual should be evacuated within 4 hours or his medical condition could deteriorate to such a degree that he will become an URGENT precedence, or whose requirements for special treatment are not available locally, or who will suffer unnecessary pain or disability.

d. Priority III—ROUTINE is assigned to sick and wounded personnel requiring evacuation but whose condition is not expected to deteriorate significantly. The sick and wounded in this category should be evacuated within 24 hours.

e. Priority IV—CONVENIENCE is assigned to patients for whom evacuation by medical vehicle is a matter of medical convenience rather than necessity.

NOTE

The NATO STANAG 3204 has deleted the category of Priority IV—CONVENIENCE; however, it will still be included in the US Army evacuation priorities as there is a requirement for it on the battlefield.

7-4. Unit Responsibilities in Evacuation

A decision to request medical evacuation places certain responsibilities on the requesting unit in the overall evacuation effort. To prepare for and assist during evacuation, the unit must—

- a.* Ensure that the tactical situation permits successful evacuation.
- b.* Have an English-speaking representative at the pickup site when evacuation is requested for non-US personnel.
- c.* Ensure that patients are ready for pickup when the request is submitted and provide patient information, as required.
- d.* Receive backhauled medical supplies and report the type, quantity, and where they are delivered.
- e.* Move patients to the safest aircraft approach and departure point or AXP if they are to be evacuated by air. Ensure that ground personnel are familiar with the principles of helicopter operations. The ground crew—

- Selects and prepares the landing site.
- Loads and unloads the helicopter according to the pilot's instructions.
- Briefs the pilot on the position of enemy troops and directs him to other units in the area, if asked.
- Guides the helicopter using hand signals during landing and takeoff when the tactical situation permits.
- Marks friendly positions when armed helicopter escort is provided.

7-5. Types of Medical Evacuation Request Formats and Procedures

a. The medical evacuation request is used for requesting evacuation support for both air and ground ambulances.

b. There are two established medical evacuation formats and procedures—one for wartime use and one used in peacetime.

c. Several differences exist between the wartime and the peacetime medical evacuation request formats and procedures. The wartime request format is shown in Table 7-1. The peacetime request form differs in two line item areas.

(1) Line 6—changed to number and type of wound, injury, or illness (two gunshot wounds and one compound fracture). If serious bleeding is reported, the patient's blood type should be given, if known.

(2) Line 9—changed to description of terrain (flat, open, sloping, wooded). If possible, include relationship of landing area to prominent terrain features.

d. Security is another basic difference between wartime and peacetime requesting procedures. Under all nonwar conditions, the safety of US military and civilian personnel outweighs the need for security, and clear text transmissions of medical evacuation requests are authorized. During wartime, the rapid evacuation of patients must be weighed against the importance of unit survivability. Accordingly, wartime medical evacuation requests are transmitted by secure means only.

e. A medical evacuation request and mission completion record format is provided in Appendix I.

7-6. Collection of Medical Evacuation Information

The medical evacuation information collected for the wartime medical evacuation request, line numbers 3 through 9, is subject to brevity codes. This information is limited to the specific remarks provided in

Table 7-1 (Page 7-7). For example: The information to be collected for Line 4 pertains to special equipment to be placed on board the evacuation vehicle or aircraft. The limiting remarks restrict identification to none required, hoist, extraction equipment, and ventilator. No other remarks are authorized for Line 4.

7-7. Preparation of the Medical Evacuation Request

Table 7-1 provides the procedures for preparation of the medical evacuation request, to include information requirements and sources.

a. During wartime, brevity codes must be used in preparing all medical evacuation requests. The authorized codes are provided in Table 7-1; they are also provided in the SOI. Use of locally devised brevity codes is not authorized. If the unit preparing the request does not have access to secure communications, the medical evacuation request must be prepared in encrypted form. Encrypting is required for all information on the request with the exception of—

(1) The medical evacuation line number identifier. This information is always transmitted in clear text.

(2) The call sign and suffix (Line 2) which can be transmitted in clear text.

b. During peacetime, two line number items (Lines 6 and 9) will change. Details for the collection of information and request preparation are shown in Table 7-1. More detailed procedures for use of the peacetime request format must be developed by each local command to meet specific requirements.

7-8. Transmission of the Request

The medical evacuation request should be made by the most direct communications means to the medical unit that controls evacuation assets. The communications means and channels used depend on the situation (organization, communication means available, location on the battlefield, and distance between units). The primary and alternate channels to be used are specified in the unit evacuation plan.

a. Secure Transmissions. Under all wartime conditions, these requests are transmitted by *SECURE MEANS* only. Therefore, the use of nonsecure communications dictates that the request be transmitted in *ENCRYPTED FORM*. Regardless of the type (secure or nonsecure) of communications equipment used in transmission, it is necessary to—

- Make proper contact with the intended receiver.
- Use the effective call sign and frequency assignments from the SOI.
- Use the proper radio procedure.

- Ensure that transmission time is kept to a minimum (20 to 25 seconds maximum).
- Provide the opening statement: "I HAVE A MEDEVAC REQUEST."

b. Receiver Acknowledgment. After the appropriate opening statement is made, the transmitting operator breaks for acknowledgment. Authentication by the receiving or transmitting unit should be done in accordance with the TSOP.

c. Clear Text and Encrypted Transmissions. If secure communications equipment is used in transmission, the request will be transmitted in *CLEAR TEXT*. However, if the communications equipment used in transmission is not secure, the request must be transmitted in encrypted form with the exception of the following:

- (1) The medical evacuation line number identifier (Line 1, Line 2, Line 3, and so forth). This information is always transmitted in clear text.
- (2) The call sign and suffix (Line 2) which can be transmitted in clear text.

NOTE

When using DRYAD Numeral Cipher, the same "SET" line is used to encrypt both the grid zone letters and the coordinates (Line 1 of the request). To avoid misunderstanding, a statement should be made that the grid zone letters are included in the message. This must be accomplished unless the TSOP specifies that the DRYAD Numeral Cipher is to be used at all times.

(3) The automated net control device (ANCD) (AN/CYZ-10) is associated equipment for the SINCGARS radios. It is capable of receiving, storing, and transferring data to SINCGARS radios, and from the ANCD to other compatible communications-electronic equipment. The ANCD (AN/CYZ-10) is used primarily for handling COMSEC keys, frequency hopping, and SOI information. (For information concerning the operation of the ANCD [AN/CYZ-10], refer to Technical Manual [TM] 11-5820-890-10-8.)

d. Letter and Numeral Pronunciation. The letters and numerals that make up the request are pronounced according to standard radio procedures. In transmission of the request, the medical evacuation request line number identifier will be given followed by the applicable evacuation information (example: Line One. TANGO PAPA FOUR SIX FIVE THREE SEVEN NINER).

e. Medical Evacuation Request Line Numbers 1 through 5. The medical evacuation request line numbers 1 through 5 must always be transmitted first. The information enables the evacuation unit to begin the mission and avoids unnecessary delay if the remaining information is not immediately available. The information for Lines 6 through 9 should be transmitted as soon as it is available.

f. Monitoring Requirement. After transmission and acknowledgment are accomplished, the transmitting operator must monitor the frequency (Line 2 of the request) to wait for additional instructions or contact from the evacuation vehicle.

7-9. Relaying Requests

If the unit receiving the request does not control the evacuation means, it must relay the request to the headquarters or unit that has control, or to another relaying unit. When the relaying unit does not have access to secure communications equipment, the request must be transmitted in encrypted form. The method of transmission and specific units involved depends on the situation. Regardless of the method of transmission, the unit relaying the request must ensure that it relays the exact information originally received and that it is transmitted by secure means only. The radio call sign and frequency relayed (Line 2 of the request) should be that of the requesting unit and not that of the relaying unit. If possible, intermediate headquarters or units relaying requests will monitor the frequency specified in Line 2. This is necessary in the event contact is not established by the medical evacuation unit, vehicle, or aircraft with the requesting unit.

Table 7-1. Procedures for Information Collection and Medical Evacuation Request Preparation

LINE	ITEM	EXPLANATION	WHERE/HOW OBTAINED	WHO NORMALLY PROVIDES	REASON
1	Location of Pickup Site	Encrypt the grid coordinates of the pickup site. When using the DRYAD Numeral Cipher, the same "SET" line will be used to encrypt the grid zone letters and the coordinates. To preclude misunderstanding, a statement is made that grid zone letters are included in the message (unless unit SOP specifies its use at all times).	From Map	Unit Leader(s)	Required so evacuation vehicle knows where to pickup patient. Also, so that the unit coordinating the evacuation mission can plan the route for the evacuation vehicle (if the evacuation vehicle must pick up from more than one location).
2	Radio Frequency, Call Sign, and Suffix	Encrypt the frequency of the radio at the pickup site, not a relay frequency. The call sign (and suffix if used) of person to be contacted at the pickup site may be transmitted in the clear.	From SOI	RTO	Required so that evacuation vehicle can contact requesting unit while en route (obtain additional information or change in situation or directions).
3	Number of Patients by Precedence	Report only applicable information and encrypt the brevity codes. A—URGENT B—URGENT-SURG C—PRIORITY D—ROUTINE E—CONVENIENCE If two or more categories must be reported in the same request, insert the word "BREAK" between each category.	From Evaluation of Patient(s)	Medic or Senior Person Present	Required by unit controlling the evacuation vehicles to assist in prioritizing missions.
4	Special Equipment Required	Encrypt the applicable brevity codes. A—None B—Hoist C—Extraction equipment D—Ventilator	From Evaluation of Patient/Situation	Medic or Senior Person Present	Required so that the equipment can be placed on board the evacuation vehicle prior to the start of the mission.

Table 7-1. Procedures for Information Collection and Medical Evacuation Request Preparation (Continued)

LINE	ITEM	EXPLANATION	WHERE/HOW OBTAINED	WHO NORMALLY PROVIDES	REASON
5	Number of Patients by Type	Report only applicable information and encrypt the brevity code. If requesting MEDEVAC for both types, insert the word "BREAK" between the litter entry and ambulatory entry. L + # of PNT – Litter A + # of PNT – Ambulatory (sitting)	From Evaluation of Patient(s)	Medic or Senior Person Present	Required so that the appropriate number of evacuation vehicles may be dispatched to the pickup site. They should be configured to carry the patients requiring evacuation.
6	Security of Pickup Site (Wartime)	N—No enemy troops in area. P—Possibly enemy troops in area (approach with caution). E—Enemy troops in area (approach with caution). X—Enemy troops in area (armed escort required).	From Evaluation of Situation	Unit Leader	Required to assist the evacuation crew in assessing the situation and determining if assistance is required. More definitive guidance can be furnished the evacuation vehicle while it is en route (specific location of enemy to assist an aircraft in planning its approach).
6	Number and Type of Wound, Injury, or Illness (Peacetime)	Specific information regarding patient wounds by type (gunshot or shrapnel). Report serious bleeding, along with patient blood type, if known.	From Evaluation of Patient	Medic or Senior Person Present	Required to assist evacuation personnel in determining treatment and special equipment needed.
7	Method of Marking Pickup Site	Encrypt the brevity codes. A—Panels B—Pyrotechnic signal C—Smoke signal D—None E—Other	Based on Situation and Availability of Materials	Medic or Senior Person Present	Required to assist the evacuation crew in identifying the specific location of the pick up. Note that the color of the panels or smoke should not be transmitted until the evacuation vehicle contacts the unit (just prior to its arrival). For security, the crew should identify the color and the unit verify it.

Table 7-1. Procedures for Information Collection and Medical Evacuation Request Preparation (Continued)

LINE	ITEM	EXPLANATION	WHERE/HOW OBTAINED	WHO NORMALLY PROVIDES	REASON
8	Patient Nationality and Status	The number of patients in each category need not be transmitted. Encrypt only the applicable brevity codes. A—US military B—US civilian C—Non-US military D—Non-US civilian E—EPW	From Evaluation of Patient	Medic or Senior Person Present	Required to assist in planning for destination facilities and need for guards. Unit requesting support should ensure that there is an English-speaking representative at the pickup site.
9	NBC Contamination (Wartime)	Include this line only when applicable. Encrypt the applicable brevity codes. N—Nuclear B—Biological C—Chemical	From Situation	Medic or Senior Person Present	Required to assist in planning for the mission. (Determine which evacuation vehicle will accomplish the mission and when it will be accomplished.)
9	Terrain Description (Peacetime)	Includes details of terrain features in and around proposed landing site. If possible, describe relationship of site to prominent terrain feature (lake, mountain, tower).	From Area Survey	Personnel at Site	Required to allow evacuation personnel to assess route/avenue of approach into area. Of particular importance if hoist operation is required.

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 3

Extracted material from FM 4-25.11

This student handout contains 28 pages of extracted material from the following publication:

FM 4-25.11, FIRST AID, 23 Dec 2002

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX B

RESCUE AND TRANSPORTATION
PROCEDURES**B-1. General**

A basic principle of first aid is to evaluate the casualty's injuries and administer first aid before moving him. However, adverse situations or conditions may jeopardize the lives of both the rescuer and the casualty if this is done. It may be necessary *first to rescue* the casualty before first aid can be effectively or safely given. The life and/or the well-being of the casualty will depend as much upon the manner in which he is *rescued and transported*, as it will upon the first aid and medical treatment he receives. Rescue actions must be done quickly and safely. Careless or rough handling of the casualty during rescue operations can aggravate his injuries.

B-2. Principles of Rescue Operations

a. When faced with the necessity of rescuing a casualty who is threatened by hostile action, fire, water, or any other immediate hazard, DO NOT take action without first determining the extent of the hazard and your ability to handle the situation. DO NOT become a casualty.

b. The rescuer must evaluate the situation and analyze the factors involved. This evaluation involves three major steps:

- Identify the task.
- Evaluate circumstances of the rescue.
- Plan the action.

B-3. Considerations

a. First determine if a rescue attempt is actually needed. It is a waste of time, equipment, and personnel to rescue someone not in need of rescuing. It is also a waste to look for someone who is not lost or needlessly risk the lives of the rescuer(s). In planning a rescue, attempt to obtain the following information:

• Who, what, where, when, why, and how the situation happened?

injuries?

- How many casualties are involved and the nature of their injuries?
- What is the tactical situation?

casualties?

- What are the terrain features and the location of the casualties?

rescue/evacuation?

- Will there be adequate assistance available to aid in the rescue/evacuation?

scene; will the casualties require movement to a safer location?

- Can first aid and/or medical treatment be provided at the scene; will the casualties require movement to a safer location?

rescue operation?

- What specialized equipment will be required for the rescue operation?

equipment and materiel be required for casualties, rescue personnel, and rescue equipment?

- Is the rescue area contaminated? Will decontamination equipment and materiel be required for casualties, rescue personnel, and rescue equipment?

- How much time is available?

b. The time element can play a significant role in how the rescue is attempted. If the casualties are in imminent danger of losing their lives (such as near a burning vehicle or in a burning building) the time available will be relatively short and will sometimes cause a rescuer to compromise planning stages and/or the first aid which can be given. However, if the casualty is in a relatively secure area and his physical condition is strong, more deliberate planning can take place. A realistic estimate of time available must be made as quickly as possible to determine action time remaining. The key elements are the casualty's physical and mental condition, the tactical situation, and the environment.

B-4. Plan of Action

a. The casualty's ability to endure is of primary importance in estimating the time available. Age, physical condition, and extent of wounds and/or injuries will differ from casualty to casualty. Therefore, to determine the time available, you will have to consider—

- Endurance time of the casualty.
- Extent of injuries.

- Type of situation.
- Personnel and/or equipment availability.
- Weather.
- Terrain (natural and man-made).
- Environment (contaminated or uncontaminated).

b. In respect to terrain, you must consider altitude and visibility. In some cases, the casualty may be of assistance because he knows more about the particular terrain or situation than you do. Maximum use of secure/reliable trails or roads is essential.

c. When taking weather into account, ensure that blankets and/or rain gear are available. Even a mild rain can complicate a normally simple rescue. In high altitudes and/or extreme cold and gusting winds, the time available is critically shortened. Be prepared to provide shelter and warmth for the casualty as well as the rescuers.

B-5. Proper Handling of Casualties

a. You may have saved the casualty's life through the application of appropriate first aid measures. However, his life can be lost through rough handling or careless transportation procedures. Before you attempt to move the casualty—

- Evaluate the type and extent of his injuries.
- Ensure that dressings over wounds are adequately reinforced.
- Ensure that fractured bones are properly immobilized and supported to prevent them from cutting through muscle, blood vessels, and skin.

b. Based upon your evaluation of the type and extent of the casualty's injury and your knowledge of the various manual carries, you must select the best possible method of manual transportation. If the casualty is conscious, tell him how he is to be transported. This will help allay his fear of movement and gain his cooperation and confidence.

c. Buddy aid for chemical agent casualties includes those actions required to prevent an incapacitated casualty from receiving additional injury

from the effects of chemical hazards. If a casualty is physically unable to decontaminate himself or administer the proper chemical agent antidote, the casualty's buddy assists him and assumes responsibility for his care. Buddy-aid includes—

- Administering the proper chemical agent antidote.
- Decontaminating the incapacitated casualty's exposed skin.
- Ensuring that his protective ensemble remains correctly
emplaced.
- Maintaining respiration.
- Controlling bleeding.
- Providing other standard first aid measures
- Transporting the casualty out of the contaminated area.

B-6. Positioning the Casualty

The first step in any manual carry is to position the casualty to be lifted. If he is conscious, he should be told how he is to be positioned and transported. This helps lessen his fear of movement and to gain his cooperation. It may be necessary to roll the casualty onto his abdomen, or his back, depending upon the position in which he is lying and the particular carry to be used.

a. To roll a casualty onto his abdomen, kneel at the casualty's uninjured side.

(1) Place his arms above his head; cross his ankle which is farther from you over the one that is closer to you.

(2) Place your hands on the shoulder which is farther from you; place your other hand in the area of his hip or thigh (Figure B-1).

(3) Roll him gently toward you onto his abdomen (Figure B-2).

b. To roll a casualty onto his back, follow the same procedure described in *a* above, except gently roll the casualty onto his back, rather than onto his abdomen.



Figure B-1. Positioning the casualty.



Figure B-2. Rolling casualty onto his abdomen.

B-7. Medical Evacuation and Transportation of Casualties

a. Medical evacuation of the sick and wounded (with en route medical care) is the responsibility of medical personnel who have been provided special training and equipment. Therefore, unless a good reason for you to transport a casualty arises, wait for some means of medical evacuation to be provided. When the situation is urgent and you are unable to obtain medical assistance or know that no medical evacuation assets are available, you will have to transport the casualty. For this reason, you must know how to transport him without increasing the seriousness of his condition.

b. Transporting a casualty by litter (FM 8-10-6) is safer and more comfortable for him than by manual means; it is also easier for you.

Manual transportation, however, may be the only feasible method because of the terrain or the combat situation; or it may be necessary to save a life. In these situations, the casualty should be transferred to a litter as soon as one can be made available or improvised.

B-8. Manual Carries

Casualties carried by manual means must be carefully and correctly handled, otherwise their injuries may become more serious or possibly fatal. Situation permitting, transport of a casualty should be organized and unhurried. Each movement should be performed as deliberately and gently as possible. Casualties should not be moved before the type and extent of injuries are evaluated and the required first aid is administered. The exception to this occurs when the situation dictates immediate movement for safety purposes (for example, it may be necessary to remove a casualty from a burning vehicle); that is, the situation dictates that the urgency of casualty movement outweighs the need to administer first aid. Manual carries are tiring for the bearers and involve the risk of increasing the severity of the casualty's injury. In some instances, however, they are essential to save the casualty's life. Although manual carries are accomplished by one or two bearers, the two-man carries are used whenever possible. They provide more comfort to the casualty, are less likely to aggravate his injuries, and are also less tiring for the bearers. The distance a casualty can be carried depends on many factors, such as—

- Nature of the casualty's injuries.
- Strength and endurance of the bearer(s).
- Weight of the casualty.
- Obstacles encountered during transport (natural or manmade).
- Type of terrain.

a. *One-man Carries.* These carries should be used when only one bearer is available to transport the casualty.

(1) The *fireman's carry* (Figure B-3) is one of the easiest ways for one individual to carry another. After an unconscious or disabled casualty has been properly positioned, he is raised from the ground, then supported and placed in the carrying position.

(a) After rolling the casualty onto his abdomen, straddle him. Extend your hands under his chest and lock them together.

(b) Lift the casualty to his knees as you move backward.

(c) Continue to move backward, thus straightening the casualty's legs and locking his knees.

(d) Walk forward, bringing the casualty to a standing position; tilt him slightly backward to prevent his knees from buckling.

(e) As you maintain constant support of the casualty with one arm, free your other arm, quickly grasp his wrist, and raise his arm high. Instantly pass your head under his raised arm, releasing it as you pass under it.

(f) Move swiftly to face the casualty and secure your arms around his waist. Immediately place your foot between his feet and spread them apart (approximately 6 to 8 inches).

(g) Grasp the casualty's wrist and raise his arm high over your head.

(h) Bend down and pull the casualty's arm over and down on your shoulder, bringing his body across your shoulders. At the same time, pass your arm between his legs.

(i) Grasp the casualty's wrist with one hand, and place your other hand on your knee for support.

(j) Rise with the casualty positioned correctly. Your other hand is free for use.



Figure B-3. Fireman's carry (Illustrated A—J).

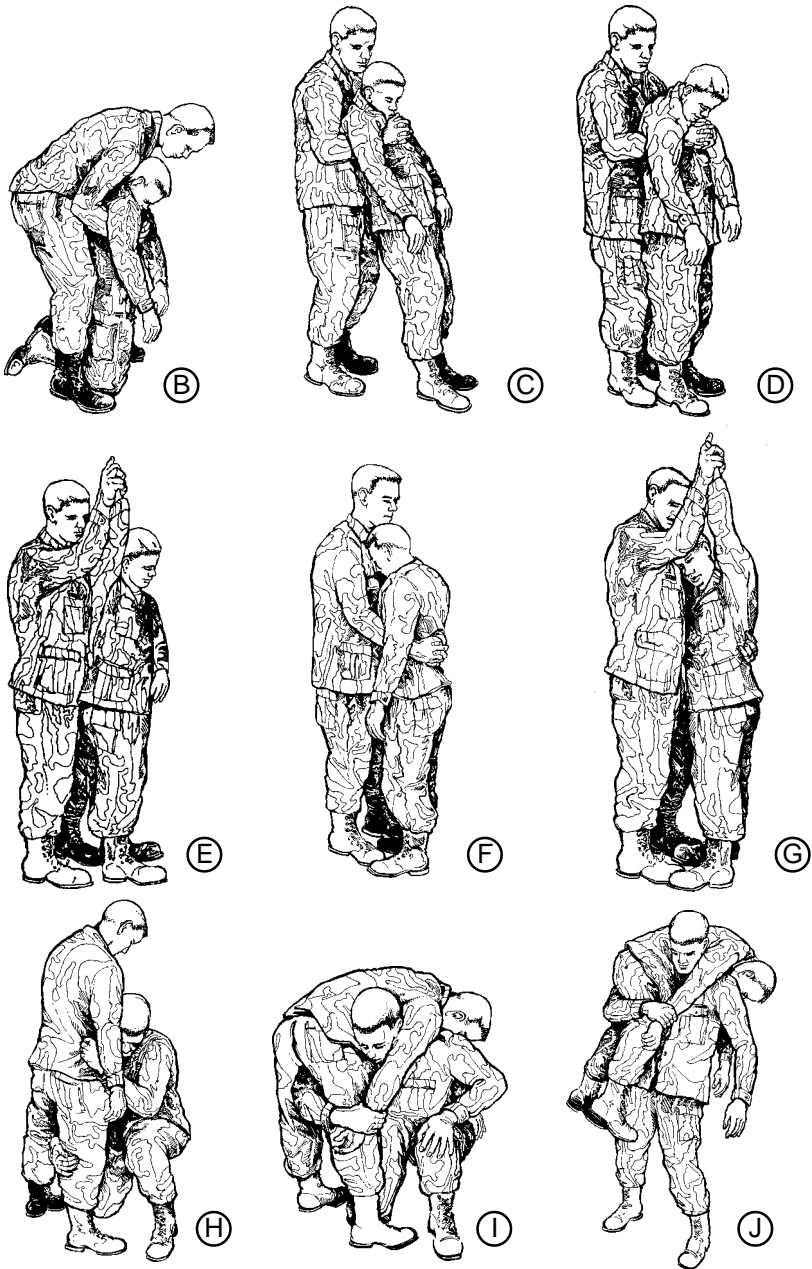


Figure B-3. Fireman's carry (Illustrated A—J) (Continued).

(2) The alternate method of the *fireman's carry* for raising a casualty from the ground is illustrated in Figure B-4; however, it should be used only when the bearer believes it to be safer for the casualty because of the location of his wounds. When the alternate method is used, care must be taken to prevent the casualty's head from snapping back and causing a neck injury. The steps for raising a casualty from the ground for the fireman's carry are also used in other one-man carries.

(a) Kneel on one knee at the casualty's head and face his feet. Extend your hands under his armpits, down his sides, and across his back.

(b) As you rise, lift the casualty to his knees. Then secure a lower hold and raise him to a standing position with his knees locked.



Figure B-4. Fireman's carry (alternate method) for lifting a casualty to a standing position (Illustrated A—B).

(3) In the *supporting carry* (Figure B-5), the casualty must be able to walk or at least hop on one leg, using the bearer as a crutch. This carry can be used to assist him as far as he is able to walk or hop.

(a) Raise the casualty from the ground to a standing position by using the fireman's carry.

(b) Grasp the casualty's wrist and draw his arm around your neck.

(c) Place your arm around his waist. The casualty is now able to walk or hop using you as a support.



Figure B-5. Supporting carry.

(4) The *arms carry* (Figure B-6) is useful in carrying a casualty for a short distance (up to 50 meters) and for placing him on a litter.

(a) Raise or lift the casualty from the ground to a standing position, as in the fireman's carry.

(b) Place one arm under the casualty's knees and your other arm around his back.

(c) Lift the casualty.

(d) Carry the casualty high to lessen fatigue.



Figure B-6. Arms carry.

(5) Only a conscious casualty can be transported by the *saddleback carry* (Figure B-7), because he must be able to hold onto the bearer's neck. To use this technique—

(a) Raise the casualty to an upright position, as in the fireman's carry.

(b) Support the casualty by placing an arm around his waist. Move to the casualty's side. Have the casualty put his arm around your neck and move in front of him with your back to support him.

(c) Have the casualty encircle his arms around your neck

(d) Stoop, raise him on your back and clasp your hands together beneath his thighs, if possible.



Figure B-7. Saddleback carry.

(6) In the *pack-strap carry* (Figure B-8), the casualty's weight rests high on the your back. This makes it easier for you to carry the casualty a moderate distance (50 to 300 meters). To eliminate the possibility of injury to the casualty's arms, you must hold his arms in a palms-down position.

(a) Lift the casualty from the ground to a standing position, as in the fireman's carry.

(b) Support the casualty with your arms around him and grasp his wrist closer to you.

(c) Place his arm over your head and across your shoulders.

(d) Move in front of him while still supporting his weight against your back.

(e) Grasp his other wrist and place this arm over your shoulder.

(f) Bend forward and raise or hoist the casualty as high on your back as possible so that his weight is resting on your back.

NOTE

Once the casualty is positioned on the bearer's back, the bearer remains as erect as possible to prevent straining or injuring his back.



Figure B-8. Pack-strap carry.

(7) The *pistol-belt carry* (Figure B-9) is the best one-man carry for a long distance (over 300 meters). The casualty is securely supported upon your shoulders by a belt. Both your hands and the casualty's (if conscious) are free for carrying a weapon or equipment, or climbing obstacles. With your hands free and the casualty secured in place, you are also able to creep through shrubs and under low-hanging branches.

(a) Link two pistol belts (or three, if necessary) together to form a sling. Place the sling under the casualty's thighs and lower back so that a loop extends from each side.

NOTE

If pistol belts are not available for use, other items such as a rifle sling, two cravat bandages, two litter straps, or any other suitable material, which will not cut or bind the casualty may be used.

(b) Lie face up between the casualty's outstretched legs. Thrust your arms through the loops and grasp his hands and trouser leg on his injured side.

(c) Roll toward the casualty's uninjured side onto your abdomen, bringing him onto your back. Adjust the sling, if necessary.

(d) Rise to a kneeling position. The belt will hold the casualty in place.

(e) Place one hand on your knee for support and rise to an upright position. (The casualty is supported on your shoulders.)

(f) Carry the casualty with your hands free for use in rifle firing, climbing, or surmounting obstacles.

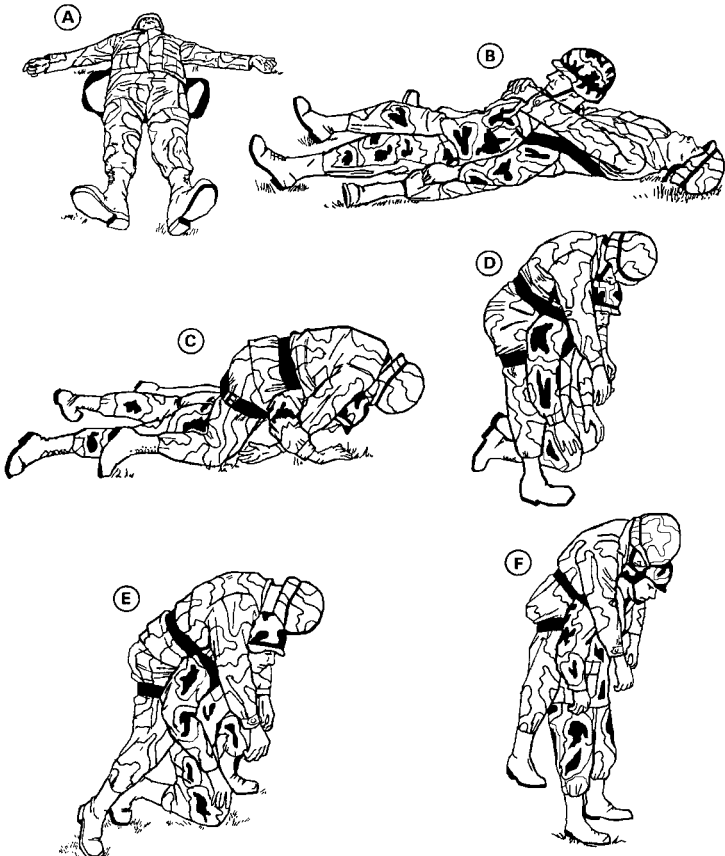


Figure B-9. Pistol-belt carry (Illustrated A—F).

(8) The *pistol-belt drag* (Figure B-10), as well as other drags, is generally used for short distances (up to 50 meters). This drag is useful in combat, since both the bearer and the casualty can remain closer to the ground than in any other drags.

(a) Extend two pistol belts or similar objects to their full length and join them together to make a continuous loop.

(b) Roll the casualty onto his back, as in the fireman's carry.

(c) Pass the loop over the casualty's head, and position it across his chest and under his armpits. Then cross the remaining portion of the loop, thus forming a figure eight. Keep tension on the belts so they do not come unhooked.

(d) Lie on your side facing the casualty.

(e) Slip the loop over your head and turn onto your abdomen. This enables you to drag the casualty as you crawl.



Figure B-10. Pistol-belt drag.

(9) The *neck drag* (Figure B-11) is useful in combat because the bearer can transport the casualty as he creeps behind a low wall or shrubbery, under a vehicle, or through a culvert. If the casualty is unconscious, his head must be protected from the ground. The neck drag cannot be used if the casualty has a broken arm.

NOTE

If the casualty is conscious, he may clasp his hands together around your neck.

(a) Tie the casualty's hands together at the wrists.

(b) Straddle the casualty in a kneeling face-to-face position.

(c) Loop the casualty's tied hands over and around your neck.

(d) Crawl forward dragging the casualty with you.

NOTE

If the casualty is unconscious, protect his head from the ground.



Figure B-11. Neck drag.

(10) The *cradle drop drag* (Figure B-12) is effective in moving a casualty up or down steps.

(a) Kneel at the casualty's head (with him lying on his back). Slide your hands, with palms up, under the casualty's shoulders and get a firm hold under his armpits.

(b) Rise (partially), supporting the casualty's head on one of your forearms. (You may bring your elbows together and let the casualty's head rest on both of your forearms.)

(c) Rise and drag the casualty backward. (The casualty is in a semisitting position.)

(d) Back down the steps, supporting the casualty's head and body and letting his hips and legs drop from step to step.

NOTE

If the casualty needs to be moved up the steps, you should back up the steps, using the same procedure.

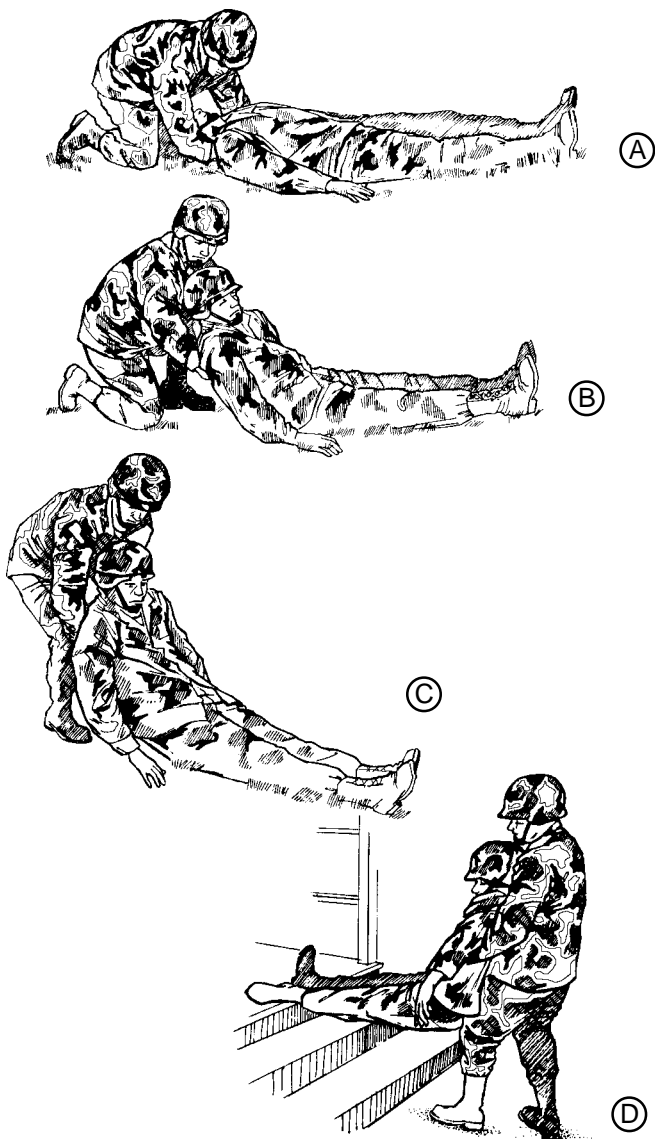


Figure B-12. Cradle-drop drag (Illustrated A—D).

(11) The *LBE carry using the bearer's LBE* can be used with a conscious casualty (Figure B-13).

- (a) Loosen all suspenders on your LBE.

(b) Have the casualty place one leg into the loop formed by your suspenders and pistol belt.

(c) Squat in front of the standing casualty. Have him place his other leg into the loop, also.

(d) Have the casualty place his arms over your shoulders, lean forward onto your back, and lock his hands together.

(e) Stand up and lean forward into a comfortable position.

(f) Continue the mission.

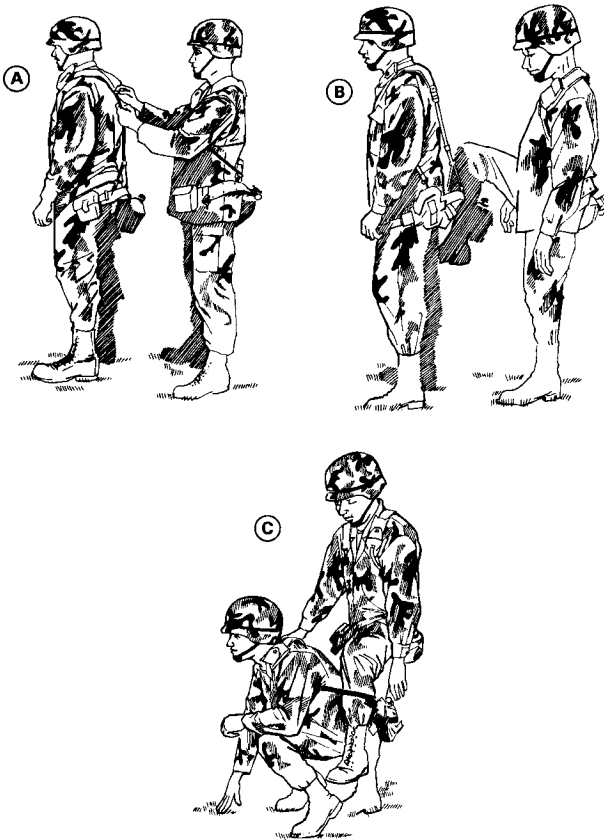


Figure B-13. Load bearing equipment carry using bearer's LBE (conscious casualty) (Illustrated A—F).

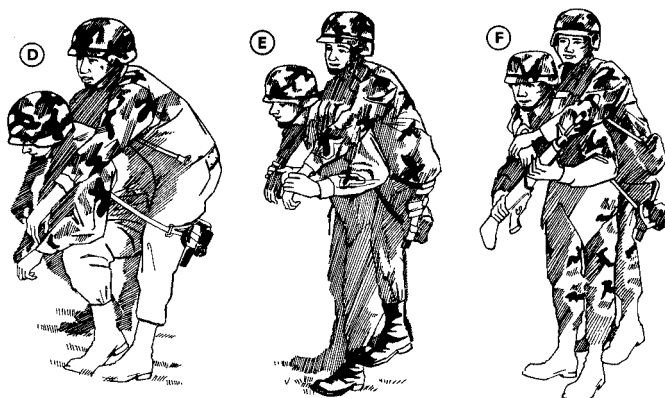


Figure B-13. Load bearing equipment carry using bearer's LBE (conscious casualty) (Illustrated A—F) (Continued).

(12) The *LBE carry using the bearer's LBE* can be used with an unconscious casualty or one who cannot stand (Figure B-14).

- (a) Position the casualty on the flat of his back.
- (b) Remove your LBE and loosen all suspender straps.
- (c) Lift the casualty's leg and place it through the loop formed by your suspenders and pistol belt. Then place the other leg through the same loop. The LBE is moved up until the pistol belt is behind the casualty's thighs.
- (d) Lay between the casualty's legs; work your arms through the LBE suspenders.
- (e) Grasp the casualty's hand (on the injured side), and roll the casualty (on his uninjured side) onto your back.
- (f) Rise to one knee and then push into a standing position.
- (g) Bring the casualty's arms over your shoulders. Grasp his hands and secure them if the casualty is unconscious. If the casualty is conscious, have him lock his hands in front if he is able to do so.
- (h) Lean forward into a comfortable position and continue the mission.

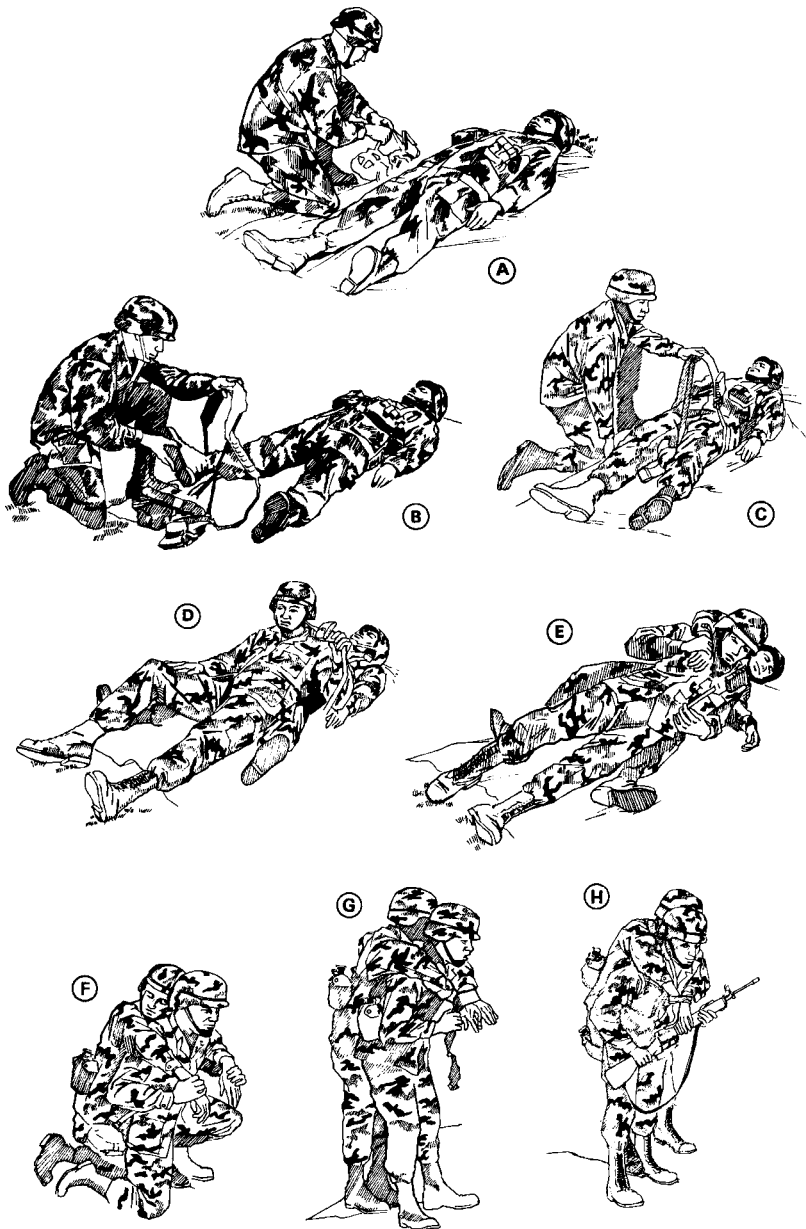


Figure B-14. Load bearing equipment carry using bearer's LBE (unconscious casualty or one that cannot stand) (Illustrated A—H).

(13) The *LBE carry using the casualty's LBE* (Figure B-15) can be used with a conscious or unconscious casualty.

- (a) Position the casualty on his back with his LBE on.
- (b) Loosen the casualty's two front suspenders.
- (c) Position yourself between the casualty's legs, and slip your arms into the casualty's two front suspenders (up to your shoulders).
- (d) Work his arms out of his LBE suspenders.
- (e) Grasp the casualty's hand (on the injured side), and roll him (on his uninjured side) onto your back.
- (f) Rise to one knee, then into a standing position.
- (g) Grasp the casualty's hands and secure them, if the casualty is unconscious. Have the casualty lock his hands in front of you, if he is conscious.
- (h) Lean forward into a comfortable position and continue the mission.



Figure B-15. Load bearing equipment carry using casualty's LBE (Illustrated A—G).



Figure B-15. Load bearing equipment carry using casualty's LBE (Illustrated A—G) (Continued).

b. Two-man Carries. These carries should be used whenever possible. They provide more casualty comfort, are less likely to aggravate injuries, and are less tiring for the bearers. Five different two-man carries can be used.

(1) The *two-man support carry* (Figure B-16) can be used in transporting either conscious or unconscious casualties. If the casualty is taller than the bearers, it may be necessary for the bearers to lift the casualty's legs and let them rest on their forearms. The bearers—

(a) Help the casualty to his feet and support him with their arms around his waist.

(b) Grasp the casualty's wrists and draw his arms around their necks.



Figure B-16. *Two-man supporting carry.*

(2) The *two-man arms carry* (Figure B-17) is useful in carrying a casualty for a moderate distance (50 to 300 meters) and placing him on a litter. To lessen fatigue, the bearers should carry the casualty high and as close to their chests as possible. In extreme emergencies when there is no time to obtain a spine board, this carry is the safest one for transporting a casualty with a back injury. If possible, two additional bearers should be used to keep the casualty's head and legs in alignment with his body. The bearers—

(a) Kneel at one side of the casualty; then they place their arms beneath the casualty's back, waist, hips, and knees.

(b) Lift the casualty while rising to their knees.

(c) Turn the casualty toward their chests, while rising to a standing position. Carry the casualty high to lessen fatigue.

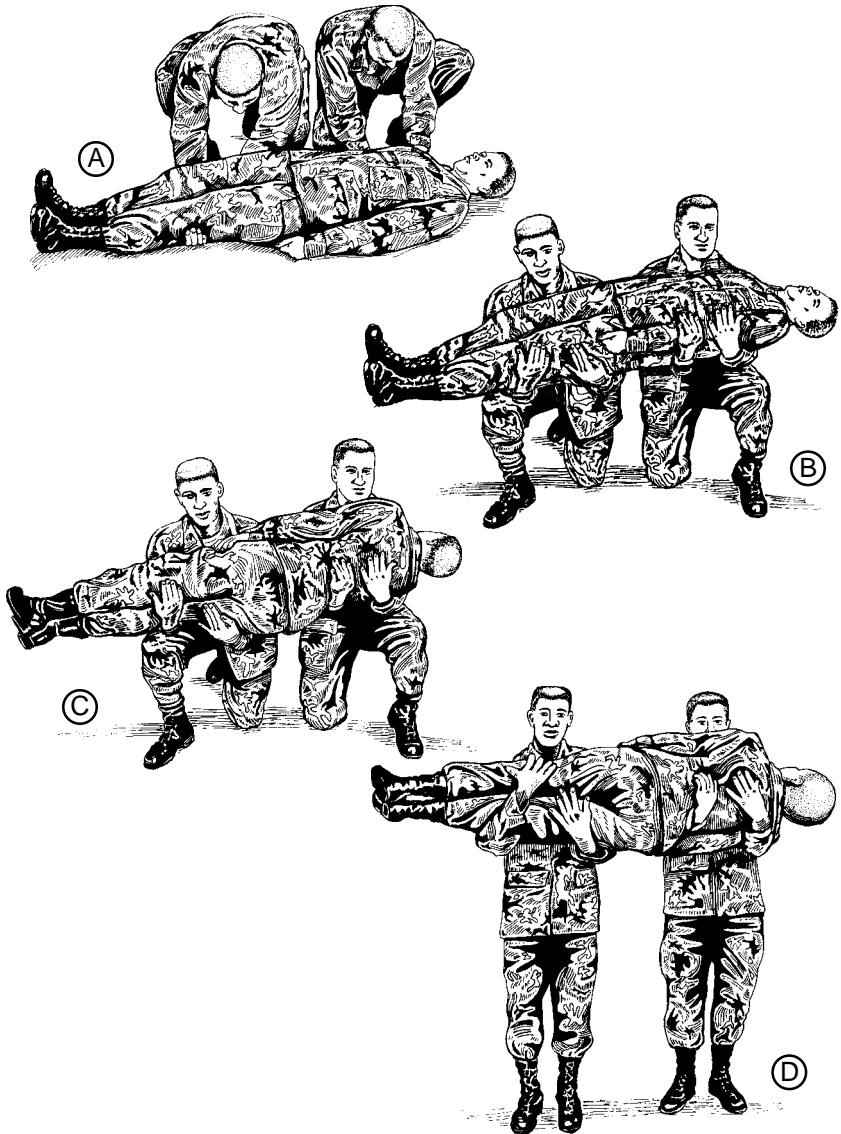


Figure B-17. Two-man arms carry (Illustrated A—D).

(3) The *two-man fore-and aft-carry* (Figure B-18) is a useful *two-man carry* for transporting a casualty for a long distance (over 300 meters). The taller of the two bearers should position himself at the casualty's head. By altering this carry so that both bearers face the casualty, it is useful for placing a casualty on a litter.

(a) The shorter bearer spreads the casualty's legs and kneels between them with his back to the casualty. He positions his hands behind the casualty's knees. The other bearer kneels at the casualty's head, slides his hands under the arms, across the chest, and locks his hands together.

(b) The two bearers rise together, lifting the casualty.



Figure B-18. Two-man fore-and aft carry (Illustrated A—B).

(4) Only a conscious casualty can be transported with the *four-hand seat carry* (Figure B-19) because he must help support himself by placing his arms around the bearers' shoulders. This carry is especially useful in transporting a casualty with a head or foot injury for a moderate distance (50 to 300 meters). It is also useful for placing a casualty on a litter.

(a) Each bearer grasps one of his wrists and one of the other bearer's wrists, thus forming a packsaddle.

(b) The two bearers lower themselves sufficiently for the casualty to sit on the packsaddle; then, they have the casualty place his arms around their shoulders for support. The bearers then rise to an upright position.

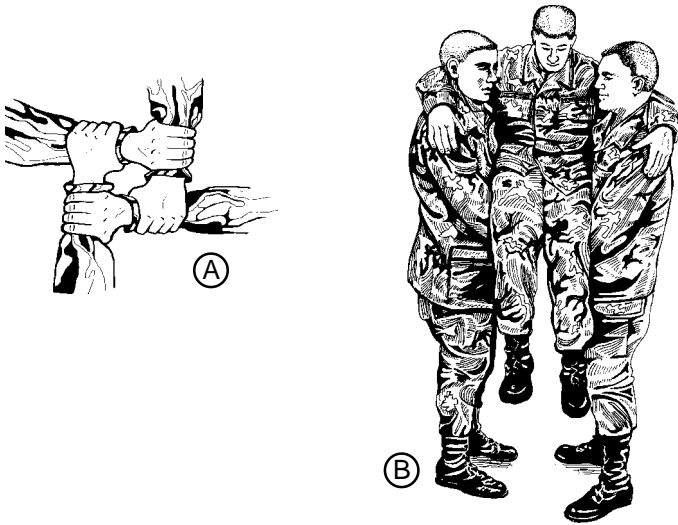


Figure B-19. Four-hand seat carry (Illustrated A—B).

(5) The *two-hand seat carry* (Figure B-20) is used when carrying a casualty for a short distance or for placing him on a litter. With the casualty lying on his back, a bearer kneels on each side of the casualty at his hips. Each bearer passes his arms under the casualty's thighs and back, and grasps the other bearer's wrists. The bearers rise lifting the casualty.

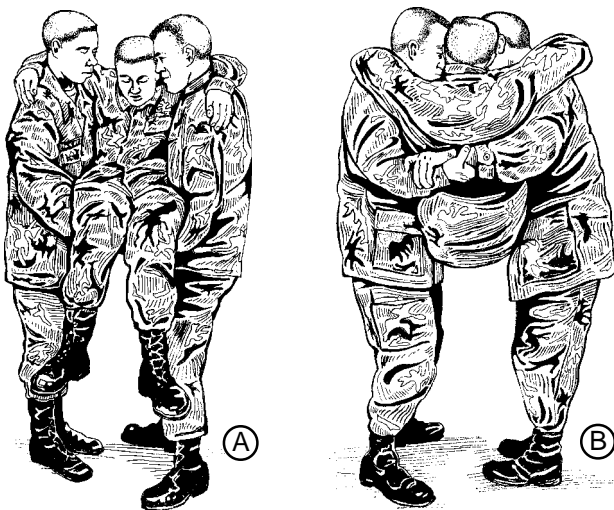


Figure B-20. Two-hand seat carry (Illustrated A—B).

B-9. Improvised Litters

Two men can support or carry a casualty without equipment for only short distances. By using available materials to improvise equipment, the casualty can be transported greater distances by two or more rescuers.

a. There are times when a casualty may have to be moved and a standard litter is not available. The distance may be too great for manual carries or the casualty may have an injury (such as a fractured neck, back, hip, or thigh) that would be aggravated by manual transportation. In these situations, litters can be improvised from materials at hand. Improvised litters must be as well constructed as possible to avoid risk of dropping or further injuring the casualty. Improvised litters are emergency measures and must be replaced by standard litters at the first opportunity.

b. Many different types of litters can be improvised, depending upon the materials available. A satisfactory litter can be made by securing poles inside such items as a blanket, poncho, shelter half, tarpaulin, mattress cover, jacket, shirt, or bed ticks, bags, and sacks (Figure B-18). Poles can be improvised from strong branches, tent supports, skis, lengths of pipe or other objects. If objects for improvising poles are not available, a blanket, poncho, or similar item can be rolled from both sides toward the center so the rolls can be gripped for carrying a patient. Most flat-surface objects of suitable size can be used as litters. Such objects include doors, boards, window shutters, benches, ladders, cots, and chairs. If possible, these objects should be padded for the casualty's comfort.

(1) To improvise a litter using a blanket and poles (Figure B-21), the following steps should be used.

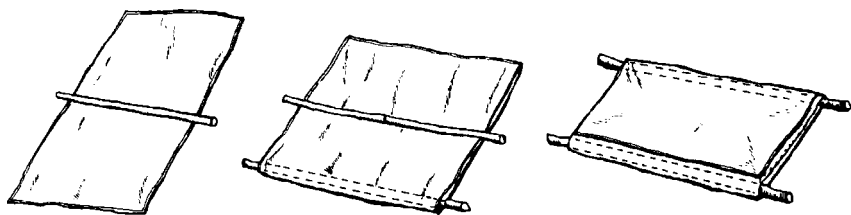


Figure B-21. Litter made with blanket and poles.

(*a*) Open the blanket and lay one pole lengthwise across the center; then fold the blanket over the pole.

(*b*) Place the second pole across the center of the folded blanket.

(c) Fold the free edges of the blanket over the second pole and across the first pole.

(2) To improvise a litter using shirts or jackets (Figure B-22), button the shirt or jacket and turn it inside out, leaving the sleeves inside, (more than one shirt or jacket may be required), then pass the pole through the sleeves.

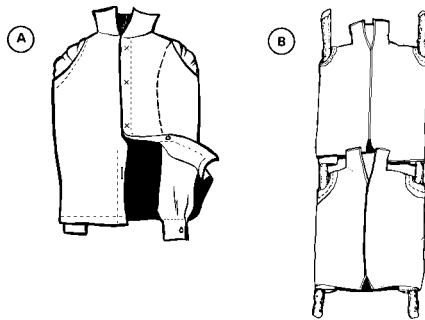


Figure B-22. Litter improvised from jackets and poles (Illustrated A—B).

(3) To improvise a litter from bed sacks and poles (Figure B-23), rip open the corners of bed ticks, bags, or sacks; then pass the poles through them.

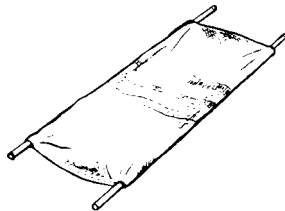


Figure B-23. Litter improvised from bed sacks and poles.

(4) If no poles are available, roll a blanket, shelter half, tarpaulin, or similar item from both sides toward the center (Figure B-24). Grip the rolls to carry the casualty.

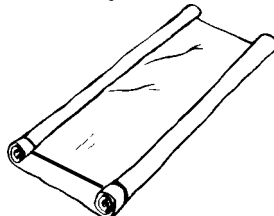


Figure B-24. Rolled blanket used as a litter.

c. Any of the appropriate carries may be used to place a casualty on a litter. These carries are:

- The one-man arms carry (Figure B-6).
- The two-man arms carry (Figure B-17).
- The two-man fore-and-aft carry (Figure B-18).
- The two-hand seat carry (Figure B-20).
- The four-hand seat carry (Figure B-19).

WARNING

Unless there is an immediate life-threatening situation (such as fire, explosion), DO NOT move a casualty with a suspected back or neck injury. Seek medical personnel for guidance on how to transport.

d. Either two or four service members (head/foot) may be used to lift a litter. To lift the litter, follow the procedure below.

- (1) Raise the litter at the same time as the other carriers/bearers.
- (2) Keep the casualty as level as possible.

NOTE

Use caution when transporting on a sloping incline/hill.

Student Handout 4

Extracted material from FM 7-10

This student handout contains 5 pages of extracted material from the following publication:

FM 7-10, THE INFANTRY RIFLE COMPANY, 28 Jun 1996/w chg 2, 4 Sep.

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

Expeditious handling of company paperwork is necessary for both efficiency and morale. The battalion PAC provides most of the company's administrative support. Information is passed from the company to the PAC through the S1 or the PAC supervisor. Though the system is informal, the information must be accurate and timely. Company administration consists of personnel services and replacement operations.

8-13. PERSONNEL SERVICES

These services include strength accounting; casualty reporting; replacement procedures; personnel records maintenance; personnel actions, such as awards, promotions and reductions, and classifications and reclassifications; and religious support.

- a. The company is responsible only for casualty reporting or requesting personnel actions.
- b. Based on local SOP, a strength accounting report is sent to battalion combat trains over the admin-log net detailing strength by officer, enlisted, and attached personnel. Data for this report must be gathered as quickly and accurately as possible because this critical information assumes increasing importance in decision-making as it is passed to the rear. Strength reports help determine the quantity of rations, water, and ammunition to send to each company. These reports are also used to analyze the company's strength, posture, and status. At higher echelons, they are used to determine which units receive priority when replacements arrive.
- c. A casualty report, [DA Form 1156](#) (Figure 8-3), is filled out when a casualty occurs or as soon as the tactical situation permits. This is usually done by the soldier's squad leader and turned in to the platoon sergeant who passes it along to the first sergeant. A brief description of how the casualty occurred, to include the place, time, and activity being performed, and who or what inflicted the wound is included. If the squad leader does not have personal knowledge of how the casualty occurred, he gets this information from any soldier who does. Pocket-size witness statements, [DA Forms 1155](#) (Figure 8-4), are used to report missing or captured soldiers or when remains are not recovered. The form is completed by the soldier with the most knowledge of the incident. This information is used to inform the soldier's next of kin and to provide a statistical base for analysis of friendly or enemy tactics. The commander writes a letter to the soldier's next of kin.

UNIT CASUALTY FEEDER REPORT		CONTROL NO. 1	TYPE OF CASUALTY <input checked="" type="checkbox"/> Battle <input type="checkbox"/> Individual <input type="checkbox"/> Hostile <input type="checkbox"/> Nonhostile	
REPORTING UNIT C BATTERY 31ST FA		IMPLICATING FORCE <input checked="" type="checkbox"/> Enemy <input type="checkbox"/> Allied <input type="checkbox"/> US <input type="checkbox"/> Other		
DATE/TIME OF INCIDENT 12 Nov 82		LOCATION OF INCIDENT RR 12244 EULON FRC		
INDIVIDUAL DATA <input type="checkbox"/> (SEE ATTACHED COVER OF ... NAMES)				
NAME FRE ROBERT				
SSN 288-00-0000		RANK SFC	UNIT C BATTERY 31ST FA	
Killed in Action/Injured		Missing in Action/Missing		
<input checked="" type="checkbox"/>		<input checked="" type="checkbox"/>		
Wounded in Action/Injured		Captured		
<input type="checkbox"/>		<input type="checkbox"/>		
Duty Status	Person's Religious Identification	Remains Recovered	Remains Identified	
POY	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	<input type="checkbox"/> YES <input checked="" type="checkbox"/> NO	
Suggested <input checked="" type="checkbox"/> NO <input type="checkbox"/> YES, Inc:				
DA FORM 1196				

UNIT ACTIVITY AT TIME OF INCIDENT NIGHT TIME DEFENSIVE POSITION			
INDIVIDUAL CIRCUMSTANCES SFC ROE WAS THE RADIO OPERATOR FOR 30 MINUTES, WHO WAS ATTACHED TO OUR UNIT FOR A MINUTE. THEY LEFT THE POSITION AT 2000 HOURS TO GO DOWN TO THE TROOP. AT THAT TIME, THEY WERE NOT ANSWERING THE RADIO. FILING WAS BEING PERFORMED IF THEY WERE AT THE HANDS.			
Type of Duty (Noncombat only)		LOD Authentication (Col or Reg P only)	
<input type="checkbox"/> Type <input type="checkbox"/> Ind <input type="checkbox"/> Unbatt			
VEHICLE INVOLVED (Noncombat only) <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO			
TYPE	OWNER/EMP	POSITION BEHIND VEHICLE	
AUTHENTICATION			
NAME	RANK	SSN	UNIT
SMITH, JACK C.	1SG	001-000000000	C BATTERY 31ST FA
DATE		SIGNATURE OF INDIVIDUAL PREPARING REPORT	
12 Nov 82		Jack C. Smith	

Figure 8-3. Casualty report.

WITNESS STATEMENT ON CASUALTY INCIDENT (AR 600-10)		CHECK APPLICABLE BOX	
1. LAST NAME, FIRST NAME MI (if possible) <i>FOE ROBERT</i>		2. SEX <i>M</i>	3. RANK <i>SPC</i>
4. ORGANIZATION <i>C BATTERY 311ST FA</i>		5. DATE OF DEATH OR WHEN LAST SEEN <i>2030, 12 NOV 82</i>	
6. GEOGRAPHICAL LOCATION OF INCIDENT (include grid coordinates and nearest town) <i>AB 12 344 FULDA FRC</i>		7. OTHER PERSONS WHO MAY HAVE WITNESSED THIS INCIDENT OR HAVE FURTHER INFORMATION <i>1SG SMITH, C BATTERY 311ST FA</i>	
8. CIRCUMSTANCES SURROUNDING INCIDENT (if known, include time of death or capture, where last seen, or how identified) <i>SP4 FOE WAS THE RADIO OPERATOR FOR 2LT JONES, WHO WAS ATTACHED TO OUR PLATOON FOR A MISSION.</i>			
(Continuation of DA FORM 115)			
REPLACES EDITION OF 1 JUN 82, WHICH WILL BE ISSUED AND USED UNTIL EXHAUSTED.			

9. CIRCUMSTANCES SURROUNDING INCIDENT (Continued)		
<i>HE WENT ON PATROL WITH 2LT JONES ON 12 NOV 82. HE LEFT OUR LINES AT 2030. NEITHER ONE RETURNED. THEY DIDN'T ANSWER THE RADIO. PLATON WAS ORDERED FORWARD FROM POSITION ABOUT 2300 HOURS.</i>		
10. NAME OF PERSON MAKING STATEMENT <i>Q. T. WILLIAMS</i>	11. RANK <i>PSG</i>	12. SEX <i>M</i>
13. UNIT <i>C BATTERY 311ST FA</i>	14. DATE <i>13 NOV 82</i>	15. SIGNATURE <i>Q. T. Williams</i>

Figure 8-4. Witness statement.

8-14 REPLACEMENT OPERATIONS

Integrating replacements into a company is important. A new arrival on the battle field may be scared and disoriented as well as unfamiliar with local SOPs and the theater of operations.

- a. The company commander should meet them and welcome them to the unit. This will normally be a brief interview. The commander must have an SOP for reception and integration of newly assigned soldiers.
- b. The platoon leader and platoon sergeant will welcome them to the unit, inform them of unit standards, and introduce them to their squad leaders.
- c. The squad leader introduces the to the squad and briefs them on duty positions. He also ensures that each replacement has a serviceable, zeroed weapon; ammunition; MOPP gear; and other essential equipment. The in-briefing should cover squad and platoon recent, and planned activities.

d. The new arrival is told about important SOPs and special information concerning the area of operations. He may be given a form letter to send to his next of kin. The letter should tell them where to mail letters and packages, tell them how to use the Red Cross in emergencies, and introduce them to the chain of command.

SECTION V. MEDICAL SUPPORT

At company level, health services support addresses three areas: preventive medicine, medical treatment, and evacuation of casualties. Each rifle company has at least three aidmen from the battalion medical platoon's combat medic section attached to perform routine and emergency combat medical services.

8-15. PREVENTIVE MEDICINE

Emphasis is placed on prevention since soldiers may become combat ineffective from disease or nonbattle injury as well as from combat wounds. By understanding and applying the principles of field hygiene, preventing weather-related injuries, and paying attention to the soldiers' overall condition, some casualties may be prevented. ([FMs 21-10](#) and [21-11](#).)

8-16. TREATMENT

Casualties are a certainty in war, and the leader must assure health service support is available. The platoon medic is trained to evaluate, triage, and treat casualties. The treatment of serious casualties usually means stabilizing the soldier until he can be evacuated to the battalion aid station. The unit SOP should call for at least one infantryman per squad to be trained as combat lifesavers to assist the medic in treating and evacuating casualties. Since aidmen and combat lifesavers cannot be everywhere on the battlefield, every soldier must be trained to provide basic first aid.

8-17. EVACUATION OF CASUALTIES

Effective casualty evacuation will provide a major increase in the morale of a unit. Casualties are treated where they fall (or under nearby cover and concealment) by a medic, combat lifesaver, or fellow soldier.

- a. During the fight, casualties often are left where they received initial treatment (self-aid, buddy-aid). As soon as the situation allows, casualties are moved to the platoon collection point. They can then be evacuated directly to the battalion aid station or to the company collection point, which is designated by the commander during the OPOD. The unit SOP should address this activity and include marking casualties during limited visibility operations. Small, standard, or IR chemical lights work well for this purpose. Once the casualties have been collected, evaluated, and triaged, further evacuation to the battalion casualty collection point or aid station begins. Normally, the battalion aid station is collocated with the battalion casualty collection point.
- b. An effective technique, particularly during an attack, is to task-organize a logistics team under the 1SG. These soldiers carry additional ammunition forward to the platoons and evacuate casualties to either the company or the battalion casualty collection point. The size of the team is determined by the leader during his estimate.
- c. When the company is widely dispersed, the casualties may be evacuated directly from the platoon casualty collection point by vehicle or helicopter. Often, helicopter evacuation is restricted due to the enemy ADA threat. In some cases, the casualties must be moved to the company

casualty collection point before evacuation. When the battalion's organic ambulances are not enough to move all the wounded, unit leaders may direct supply vehicles to "backhaul" casualties to the battalion aid station after supplies are delivered. In other cases, the platoon sergeant may direct platoon litter teams to carry the casualties to the rear.

d. Leaders must minimize the number of soldiers required to evacuate casualties. Casualties with minor wounds can walk or even assist carrying the more seriously wounded. Field expedient litters can be made by cutting small trees and putting the poles through the sleeves of buttoned BDU blouses. A travoise, or skid, may be used for casualty evacuation. This is a type of litter on which wounded can be strapped, and it can be pulled by one person. It can be locally fabricated from durable, rollable plastic on which tie-down straps are fastened. [FM 7-20](#) discusses a SKEDS litter that is available for issue.

e. In rough terrain (or on patrols), casualties may be evacuated to the battalion aid station by litter teams, carried with the unit until transportation can reach them, or left at a position and picked up later.

f. Unit SOPs and OPORDs must address casualty evacuation in detail. They should cover the duties and responsibilities of key personnel; the evacuation of chemically contaminated casualties (on separate routes from noncontaminated); and the priority for manning key weapons and positions. They should specify preferred and alternate methods of evacuation and make provisions for retrieving and safeguarding the weapons, ammunition, and equipment of casualties. Slightly wounded personnel are treated and returned to duty by the lowest echelon possible. Sick soldiers are evaluated by medics in the platoon and either treated or evacuated as necessary. Remains are kept covered, separated from the wounded, and evacuated by backhaul on supply vehicles as soon as possible. Casualty evacuation should be rehearsed like any other critical part of an operation.

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 5

Extracted material from STP21-24-SMCT

This student handout contains 4 pages of extracted material from the following publication:

STP 21-24-SMCT, THE Soldier's Manual of Common Tasks, Skill level 2, 3, and 4, Aug 2003.

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library Home Page. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

805C-PAD-2060(SL2)[View 2003 Tasks](#)[View 2001 Tasks](#)

Source: Soldiers Manual of Common Tasks Skill Levels 2 - 4 STP 21-24-SMCT
August 2003

Notes: No updates available

Conditions: Given a casualty, DA Form 1155, DA Form 1156, a map, and a pen or pencil.

Standards: Recorded all known data elements accurately and legibly on DA Form 1156 and DA Form 1155, without error.

Performance Steps

- 1.** Prepare DA Form 1156.
 - a.** Leave the Control Number item blank.
 - b.** Complete the Check Applicable Box item as it pertains to the casualty.
 - c.** Complete item 1 with the casualty's last name, first name, and middle initial (to include Jr, Sr, III).
 - d.** Complete item 2 with the casualty's complete Social Security number.
 - e.** Complete item 3 with the casualty's rank.
 - f.** Complete item 4 with the hour and date of incident to include the time zone.
 - g.** Complete item 5 with the casualty's unit.
 - h.** Complete item 6 with the geographical location (nearby town) and grid coordinates to include the 100,000-meter square grid coordinates, 2-letter designator, and nearest village or field trainers.
 - i.** Complete item 7 with a check in the appropriate box to enter the type of casualty (only medical personnel may enter a check in the lightly wounded or injured in action and seriously injured or injured in action boxes); check yes or no to indicate if the body was recovered; check yes or no to indicate if the body has been identified; enter the collection point to which the casualty is evacuated, if unknown indicate "unknown."
 - j.** Complete item 8 with the witnesses who saw the incident or identified remains to include the name, grade, social security number, and unit(s) of witnesses.
 - k.** Complete item 9 with the applicable remarks to include additional circumstances such as, religious ministration performed, type of mission the unit was conducting, short synopsis of the incident.
 - l.** Do not complete the first three boxes in item 10 but enter his or her unit, grade, Social Security number, date, and signature in item 10 as the person who prepared the report.
- 2.** Prepare DA Form 1155.
 - a.** Check the applicable box at the top of the form as it relates to the casualty witnessed.
 - b.** Complete item 1 with the casualty's last name, first name, and middle name.
 - c.** Leave item 2 blank.
 - d.** Complete item 2a with the casualty's complete Social Security number
 - e.** Complete item 3 with the casualty's rank.
 - f.** Complete item 4, if appropriate, with the date of the casualty's death or the date when the casualty was last seen along with the time zone.

- g.** Complete item 5 with the casualty's unit.
- h.** Complete item 6 with the geographical location including the six-digit coordinate as well as the nearest town to the incident.
- i.** Complete item 7 only if name or Social Security number of the casualty is unknown or not positive. If they are unknown or not positive enter the estimated age, weight, height, hair color, eye color, race, home town, civilian occupation, nickname, spouse's name, children's name(s), (if applicable), other identifying marks (such as birthmarks or tattoos), and other persons who may have witnessed the incident or have further information.
- j.** Complete item 8 with a short, concise narrative of the circumstances regarding the incident and, if known, the cause of death or condition when last seen and how identified.
- k.** Complete items 9 through 13 with the name, Social Security number, unit, date, and signature of the person making the statement.
- l.** Submit form in accordance with local guidance.

Evaluation Preparation:

Setup: Provide soldier with DA Form 1155 and DA Form 1156, a map, pencil and paper. Give the soldier a scenario that provides all the information needed to accomplish the performance measures.

Brief Soldier: Tell the soldier that he will be evaluated on his ability to report casualties, by preparing DA Form 1155 and DA Form 1156.

Performance Measures		GO	NO GO
1.	Prepared DA Form 1156.	—	—
a.	Left the Control Number item blank.		
b.	Completed the Check Applicable Box item as it pertained to the casualty.		
c.	Completed item 1 with the casualty's last name, first name, and middle initial (to include Jr. Sr. III).		
d.	Completed item 2 with the casualty's complete Social Security number.		
e.	Completed item 3 with the casualty's rank.		
f.	Completed item 4 with the hour and date of incident to include the time zone.		
g.	Completed item 5 with the casualty's unit.		
h.	Completed item 6 with the geographic location (nearby town) and grid coordinates to include the 100,000-meter square grid coordinates, 2-letter designator, and nearest village or field trainers.		
i.	Completed item 7 with a check in the appropriate box; entered the type of casualty (only medical personnel may enter a check in the lightly wounded or injured in action and seriously injured or injured in action boxes); checked yes or no to indicate if the body was recovered; checked yes or no to indicate if the body has been identified; entered the collection point to which the		

casualty was evacuated, if unknown indicated "unknown."

j. Completed item 8 with the witnesses who saw the incident or identified remains to include the name, grade, Social Security number, and unit(s) of witnesses.

k. Completed item 9 with the applicable remarks to include additional circumstances, such as religious ministrations performed, type of mission the unit was conducting, short synopsis of the incident.

l. Did not complete the first three boxes in item 10 but entered his or her unit, grade, Social Security number, date, and signature in item 10 as the person who prepared the report.

2. Prepared DA Form 1155.

a. Checked the applicable box at the top of the form as it related to the casualty witnessed.

b. Completed item 1 with the casualty's last name, first name, and middle name.

c. Left item 2 blank.

d. Completed item 2a with the casualty's complete Social Security number.

e. Completed item 3 with the casualty's rank.

f. Completed item 4, if appropriate, with the date of the casualty's death or the date when the casualty was last seen along with the time zone.

g. Completed item 5 with the casualty's unit.

h. Completed item 6 with the geographic location including the six-digit coordinate as well as the nearest town to the incident.

i. Completed item 7 only if name or Social Security number of the casualty is unknown or not positive. If they are unknown or not positive entered the estimated age, weight, height, hair color, eye color, race, home town, civilian occupation, nickname, spouse's name, children's name(s), (if applicable), other identifying marks (such as birthmarks or tattoos), and other persons who may have witnessed the incident or have further information.

j. Completed item 8 with a short, concise narrative of the circumstances regarding the incident and, if known, the cause of death or condition when last seen and how identified.

k. Completed items 9 through 13 with the name, Social Security number, unit, date, and signature of the person making the statement.

l. Submitted form in accordance with local guidance.

Evaluation Guidance: Score the soldier GO on performance measures passed. Score the soldier NO GO on any performance measures failed. The soldier must score a GO on all of the performance measures to receive a GO on the task. If the soldier scores NO GO, show the soldier what was done wrong.

References

Required

DA Form 1155

DA Form 1156

Related

AR 600-8-1

HANDOUTS FOR LESSON 1: W323 version 1

**This Appendix
Contains**

This Appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet.	SH-1-1
SH-2, Extract from FM 7-10, Chap 2, and App G.	SH-2-1 thru SH-2-48
SH-3, Extract from FM 5-71-2, App C.	SH-3-1 thru SH 3-2
SH-4, Student Notes	SH-4-2 thru SH-4-6

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 1

This student handout contains the Advance Sheet.

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 1

Advance Sheet

Overview

This lesson will show you the requirements for directing your squad's operations using the troop-leading procedure. The lesson consists of a before-class reading assignment, a classroom discussion, and a practical exercise.

TLO

Terminal Learning Objective (TLO)

Action:	Determine the actions necessary to direct squad operations.
Conditions:	As a squad leader in a classroom environment.
Standards:	Determined the actions necessary to direct squad operations as stated in FM 7-10.

ELOs

- (A) Identify actions necessary upon receiving a mission.
 - (B) Identify actions necessary to issue a warning order.
 - (C) Identify actions necessary to make a tentative plan.
 - (D) Identify actions necessary to initiate movement.
 - (E) Identify actions necessary to conduct reconnaissance.
 - (F) Identify actions necessary to complete the plan.
 - (G) Identify actions necessary to issue an order.
 - (H) Identify actions necessary to supervise an operation.
 - (I) Determine a course of action.
-

Student Assignments

Study FM 7-10, Chap 2, Sections II and III and Appendix G, para G-1 and G-2,(SH-3).

**Additional
Subject Area
Resources**

None

Bring to Class

- Student Handouts 1 and 2.
 - Pen or pencil.
 - Writing paper.
-

Student Handout 2

This student handout contains 50 pages of extracted material from FM 7-10, Chap 2, Section II and III and App G, para G-1 and G-2.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 2

COMMAND AND CONTROL

The more fluid the battlefield, the more important and difficult it will be to identify decisive points and to focus combat power there.... Communications will be interrupted by enemy action at critical times.... Subordinate leaders will be expected to act on their own initiative within the framework of the commander's intent.

FM 100-5, 1986

Command and control is the process of directing, coordinating, and controlling the unit to accomplish the mission. The purpose of command and control is to implement the commander's will in pursuit of the unit's objective. Command and control is both a system and a process. At company level, the system consists of the personnel, equipment, procedures, and concepts that carry out the C2 process. The essential component for both the process and the system is leadership. Effective mission-oriented C2 is critical to success in battle. A detailed discussion of the key concepts and principles for M-OC2 is in Section I. The following historical vignette clearly depicts the critical importance of many of these fundamentals.

During operation "Just Cause" in Panama in December 1989, Company A, 4th Battalion, 17th Infantry was assigned the mission of seizing the PDF barracks at Fort Espinar to prevent the PDF infantry company from deploying into their combat positions. The objective consisted of two multistory concrete buildings. These buildings were surrounded by a chain link fence built on top of a 2-foot high brick wall. Approximately 95 PDF soldiers armed with small arms, machine guns, and RPG-18 antitank rocket launchers actually occupied the buildings, although the company commander had been told to expect from 150 to 160 enemy.

The commander's concept was to isolate and suppress the objective with a support element consisting of one rifle platoon, a smaller fire support position consisting of an M60 machine gun team secured by three riflemen, and a third position occupied by the company's antitank section and a towed Vulcan 20-mm ADA gun. The three separate support positions were necessary in order to obtain the right firing angles against the objective's two main buildings, and to isolate the objective area.

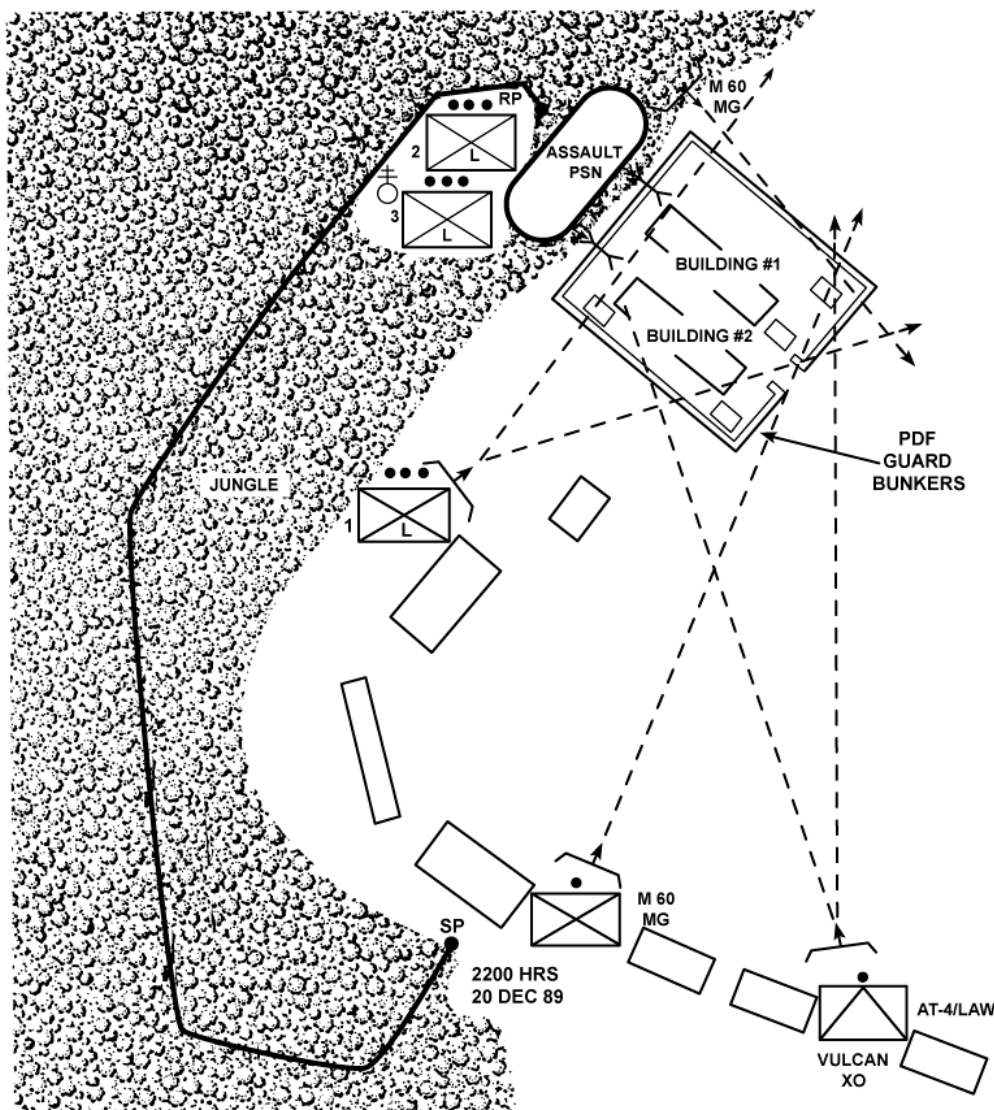


Diagram of the objective area.

The company XO was designated the support element leader while the CO went with the assault element (company main effort). The support element's mission was to suppress the enemy within the barracks complex to allow the breach element to breach the obstacle. The commander's intent (the purpose) for this element was to support the breach element's successful breach of the fence. The support element was also tasked to isolate the objective area and provide suppressive fires to allow the assault element to clear the objective. The XO's instructions were to initiate fires against the PDF barracks at H-hour minus two minutes. (Radio listening silence had been imposed.) He was to fire for two and one-half minutes and then cease fire while a recorded surrender request was broadcast. The breach element needed this suppressive fire to support its move from the assault position up to the designated breach positions and to prepare their demolitions.

The element of surprise was lost about 26 minutes before H-hour when shooting started at Coco Solo, about two miles away. About 10 minutes later, firing started at

another building on Fort Espinar as a platoon from an adjacent battalion was moving into its position.

The XO was under pressure from soldiers in the fire support element to initiate their fire early since the PDF were obviously alerted. He resisted this pressure and repeatedly cautioned the soldiers around him to hold their fire. At the exact preplanned time, he initiated the support element's fires.

The XO understood that the battalion commander's intent for the company (the purpose) was to prevent the deployment of the PDF company into their combat positions. Since he could observe the gate, he could initiate fires if the PDF began to deploy. He also knew that his purpose (his commander's intent) of the fire was not to inflict the maximum casualties on the PDF, it was to cover the movement of the breach element as it moved forward to prepare the bangalore in the enemy's obstacles. If he had initiated fire early, he would not have helped the breach/assault element still moving in the jungle. As it was, his timing was perfect. The assault element had just reached the edge of the jungle when the XO opened fire. They were able to move undetected up the steep slope to the compound under excellent suppressive fires.

As a result of the XO's proper decision, the mission was accomplished with near perfection. The company captured 84 enemy soldiers and killed several. Company A suffered no casualties and was ready to continue combat operations immediately following this action.

The actions of Company A provide an excellent example of many of the key fundamentals of mission-oriented command and control. The utility of the commander's intent is clearly evident as is the need to understand the intent of both higher commanders (two levels up). By clearly stating the assigned missions (task and purpose) for their subordinates in his concept, each commander ensured his subordinates were able to effectively use their initiative during the conduct of decentralized operations. In addition, the identification of the main effort provided the focus for all other subordinates to base their actions on. Because these commander's used effective mission orders, they were able to depend on their subordinates to make the proper decision allowing the commander of Company A to command well forward and locate himself at the decisive point with his main effort.

Section I. COMMAND AND CONTROL SYSTEM

The company's command and control system must be reliable, responsive, and durable. It must withstand crises, even the loss of the commander, and still continue to function. Although it is the most complex system in the company, the result must be clear, concise instructions that focus the entire unit toward the company's objective. This section describes the structure and key concepts of the command and control system.

2-1. DEFINITIONS

Success in battle will require a combination of command and control. The proper mix of command and control is determined by the situation, but commanders must emphasize command and reduce control measures that restrict their subordinate's freedom of action.

a. **Command.** Command is the process that instills the commander's will among his subordinates. It provides focus and direction to the company. The commander's leadership is an integral part of command.

b. **Control.** Control, as the counterpart of command, follows up a decision and minimizes deviation from the commander's concept. Control provides supervision to the operation while synchronizing all systems and activities.

c. **Synchronization.** Commanders must avoid depending on close control of their units to achieve synchronization. This slows execution and limits their subordinates' initiative. Synchronization is maintained during execution by the proper decision of subordinates. A clear understanding of the commander's intent and a simple effective concept are the keys to maintaining synchronization.

2-2. COMMANDER'S LEADERSHIP

Leadership is the critical element of both combat power and the command and control system. Through leadership the commander causes his unit to complete demanding tasks in difficult situations. Commanders must understand the military leadership philosophy in FM 22-100. In addition, the following factors are key to the company commander's ability to lead his company on the AirLand battlefield.

a. **Will.** Often the victor in battle is the unit that refuses to lose. Competent leaders and tough, realistic training are the keys to developing this determination. The CO must develop a "will to win" in his soldiers and his company.

b. **Trust.** The CO must earn the trust of his men. They must have confidence in his abilities. He must also trust his soldiers and develop a command climate that allows subordinates to make decisions.

c. **Delegation.** After ensuring his subordinates are well trained, the CO must delegate the proper authority and freedoms to his men. The CO focuses his time and energy on what is critical and delegates the remainder to his subordinates.

d. **Discipline.** The CO instills discipline in his soldiers. Discipline ensures proper standards are maintained in the absence of leader supervision. The decentralized operations, which the company routinely conducts, require self-discipline of every soldier in the company.

2-3. MISSION-ORIENTED COMMAND AND CONTROL

Mission-oriented command and control is the Army's doctrinal approach to C2 on the AirLand battlefield. It is a method of directing military operations that encourages and expects subordinates to take action consistent with the intent and concept of higher headquarters. The following principles provide the fundamentals for M-OC2.

a. **Expect Uncertainty.** The commander must understand the environment of combat; the battle will be dynamic and nonlinear. Communications will be degraded, and the chaos of battle will often prevent the commander from knowing what is happening beyond his own senses. The situation during planning will always change before execution.

b. **Reduce Leader Intervention.** Plan and direct operations to require the absolute minimum intervention during execution. When soldiers expect the commander to make the decision or initiate the action, they are reluctant to take action. When precise control is required for synchronization, such as an on-order task, the commander should also provide the subordinate the criteria for making the decision. Leaders must realize that some loss of precision is better than inactivity.

c. **Increase Subordinate Planning Time.** The CO ensures the effective use of all available planning time. Although the majority of the planning takes place at company level, the squads and platoons require extra time to conduct their rehearsals and inspections. SOPs and warning orders are key tools for using time well.

d. **Give Subordinates Maximum Freedom of Action.** Given the expected battlefield conditions, leaders at every level avoid unnecessary limits on their soldiers' freedom of action. The leader at the point of decision must have the knowledge, the training, and the freedom to make the correct decision that supports the commander's intent.

e. **Command/Lead Well Forward.** The commander locates where he can best fight his company. This is determined by a number of factors. His leadership is most effective face-to-face when he can see the situation and his soldiers can see him. Since he can not be everywhere, the CO focuses on the decisive action that will accomplish his mission. He normally locates with his main effort (the subordinate unit assigned the decisive action) to provide his leadership and to be in a position to shift or retask the main effort.

2-4. COMMANDER'S INTENT

Knowing the commander's intent enables subordinates to use their initiative during the execution of an operation. Clear and concise terms are used to state the intent to ensure understanding throughout the force. It must be clearly understood by all means of communication; written, face-to-face, or spoken via radio or land line. The relationship between the battalion commander's intent for the company, the company's role in his concept, the designation of the main effort, and the development of the CO's concept and assignment of his subordinate's intent is the focus of mission orders.

a. **Intent.** Intent is defined as the result the commander expects the unit to accomplish in a specific operation. At the lowest tactical levels (company and below), intent is normally the purpose from the mission statement. As such, it is assigned by the battalion commander when he determined the company's mission statement. This mission statement consists of the mission essential task to be accomplished and the purpose (result) it achieves.

b. **Commander's Concept.** When the battalion commander develops his concept, he determines the mission for the company. He first determines the purpose the company must achieve and then assigns the task(s) he feels will achieve that purpose. During the fight, if the assigned task will not achieve the purpose, the CO is expected to retask the company to achieve it. Soldiers should make every effort to inform their commander of their actions, but they must not wait for an order to act. Another example of how the assigned purpose/intent guides actions could be: During execution, the CO sees the opportunity to achieve his assigned purpose faster or less costly by acting now. When making this decision, he must consider what his company's role is within his commander's concept. He must make every effort to operate within the framework of the battalion commander's concept because it provides the synchronization and concentration of combat power for the operation. If he determines that his actions will not jeopardize the unit or the mission, then in the absence of communications he must act.

c. **Concept Development.** To accomplish the assigned mission, the CO assigns missions to his platoons and sections. Just as the battalion commander assigned company missions and designate d his main effort, the CO does the same for the company. He also

ensures that his concept fits within the battalion commander's concept. This results in a unity of effort but supports decentralized execution. At each level, the commander is given his mission by his superior, develops a concept to accomplish the mission, organizes his unit to fight the concept, and assigns each subordinate his responsibilities. The vehicle for providing this information is the OPORD.

d. **Main Effort.** The platoon with the most important task in the CO's concept is designated the main effort. This unit is the focus; all other units support the quick success of the main effort. Success by the main effort should result in the accomplishment of the commander's mission. When considering independent action, each leader makes his decision based on his relationship to the main effort. The linkage between supporting and main efforts must be maintained except in extraordinary cases, such as when a leader of a supporting effort sees the chance to accomplish the purpose of the main effort. This leader asks the question, "What would my commander do if he knew what I know?" Since the proper response would be to shift the main effort to this leader's unit, he should immediately retask himself and accomplish the purpose that was assigned to the main effort. If the original main effort leader was informed or became aware of this development, he should determine how to best support the new main effort, retask himself, issue a FRAGO to his soldiers, and join the fight.

2-5. MISSION ORDERS

AirLand Battle doctrine requires the use of mission-type orders. Mission orders focus on what tasks must be accomplished without specifying how they will be done. Whenever possible, they are oral orders issued face-to-face on the ground where the fight will take place. Mission orders require well-trained subordinates who understand their commanders' intent and concepts (two levels higher).

a. Mission orders address only the required information. Avoid unnecessary detail and redundancy; do not restate doctrine or SOPs. Develop unit SOPs that reduce the length of orders; use clear and concise terms and graphics. FM 101-5-1 is the doctrinal source for terms and graphics, every leader in the unit must understand these.

b. The commander determines exactly what he wants his platoons to accomplish and clearly communicates these requirements to them. If one of his leaders has not earned his trust or has not displayed the tactical competence to operate with a mission order, then the order must be tailored, based on the training, experience, and capability of the leader receiving the order.

(1) This may include nothing more than providing additional instructions, establishing more restrictive control measures, or directing a specific use for one of his organic assets, such as positioning one of the grenadiers to block enemy movement up a ravine to prevent the enemy from flanking the platoon's battle position.

(2) Or in an unusual situation, the CO may detail exactly how the platoon leader will employ his entire platoon, clearly state the limits for using his initiative, and collocate himself or the XO with this platoon. This should be only a short-term solution; leaders must be trained to meet their responsibilities.

2-6. DUTIES AND RESPONSIBILITIES OF KEY PERSONNEL

The company must accomplish many different tactical, administrative, and logistical tasks. To accomplish these, the duties and responsibilities of key personnel must be defined, coordinated, and understood.

a. **Company Commander.**

(1) The commander is responsible for everything the company does or fails to do. This includes the tactical employment, training, administration, personnel management, and sustainment of his company. He must know the capabilities of his men and supporting weapons and how to tactically employ them. He must also know the capabilities of the enemy.

(2) The CO exercises command through his subordinate leaders.

(3) The CO employs his company to support the accomplishment of the battalion and brigade missions. He requests additional support from battalion when required.

b. **Executive Officer.**

(1) The XO is second in command. His primary role is to help the commander fight the company. He ensures the tactical reports from the platoons are forwarded to the battalion tactical operations center. The XO may locate where he can maintain communications with the company commander and the battalion TOC. He may require additional soldiers to provide security and provide a CONOPS capability (see Section IV). The XO assumes command of the company as required.

(2) Before the battle, the XO (with the 1SG) plans and supervises the company CSS. They make sure precombat inspections are complete. He plans and coordinates logistical support with agencies outside the company while the 1SG does the same internally. He prepares or assists in the preparation of paragraph 4 of the OPORD. He may also assist the CO in planning the mission.

(3) The XO coordinates with higher, adjacent, and supporting units. He may aid in control of a phase of the battle, such as passage of lines, bridging a gap, breaching an obstacle, or assumption of control of a platoon attached on the move.

(4) The XO may be assigned tactical missions, such as the following:

(a) Landing zone/pickup zone control officer. This may include straggler control or casualty evacuations and resupply operations as well as air/ground liaison.

(b) Quartering party/detachment OIC. The XO may be the OIC of an element consisting of representatives of various company elements. Their purpose is to precede the company and reconnoiter, secure, and mark an assembly area or battle position. Or they remain behind the company to move or secure excess equipment and personnel while the company moves to a new location or conducts combat operations.

(c) Element leader. The XO may be assigned a mission and a task—organized element with which to accomplish it. He may, for instance, control all the company machine guns, the 60-mm mortars, and one rifle platoon as the support element leader in a company raid or attack. Common missions of this nature include—

- Lead the reserve.
- Lead the DLIC during a withdrawal.
- Control attachments to the company.

c. **First Sergeant.**

(1) He is the senior NCO and normally the most experienced soldier in the company. He is the commander's primary tactical advisor and expert on individual and NCO skills.

He assists the commander in planning, coordinating, and supervising all activities that support the unit mission. He operates where the commander directs or where his duties require him.

(2) His specific duties include the following:

(a) Execute and supervise routine operations. This includes enforcing the tactical SOP; planning and coordinating training; coordinating and reporting personnel and administrative actions; and supervising supply, maintenance, communications, field hygiene, and medical evacuation operations.

(b) Supervise, inspect, or observe matters designated by the commander. (For example—observe and report on a portion of the company's sector or zone, inspect the mortar section, or inspect all range cards.)

(c) Assist and coordinate with the XO. Be prepared to assume his duties.

(d) Lead task—organized elements or subunits on designated missions.

d. Fire Support Officer.

(1) The FSO helps plan, coordinate, and execute the company's fire support. During planning, he develops a fire support plan based on the CO's concept and guidance. He coordinates the fire support plan with the battalion FSO.

(2) During the planning, the FSO also—

- Advises the CO of the capabilities and current status of all available fire support assets.
- Assists the CO in developing the OPORD to ensure full integration of fires into the commander's concept.
- Designates targets and fire control measures and determines method of engagement and responsibility for firing the targets.
- Determines the specific tasks and instructions required to conduct and control the fire plan.
- Briefs the fire support plan as part of the company OPORD and coordinates with platoon FOs to ensure they understand their responsibilities.
- Integrates platoon targets into the company target overlay and target worksheet. Passes these products to the battalion FSE.

(3) During the battle, the FSO normally locates with the CO. This allows greater flexibility in conducting or adjusting the fire support plan. At times, the FSO may locate away from the CO to more effectively control supporting fires. The FSO informs the CO of key information received on his radio net.

(4) The FSO must understand infantry tactics. This not only provides better fires integration, but if the CO becomes a casualty, the FSO may need to assume control of the operation until the XO is able to.

(5) The FSO may coordinate CAS or NGF, or employ and control the company mortar section.

(6) The FSO ensures the indirect fire plan is part of each company rehearsal.

e. Communications Sergeant.

(1) He supervises operation, maintenance, and installation of organic wire and FM communications. This includes sending and receiving routine traffic and making required communication checks.

(2) He supervises the company CP to include relaying information, monitoring the tactical situation, establishing the CP security plan and radio watch schedule, and informing the commander and subordinate units of significant events.

(3) He performs limited troubleshooting of organic communication equipment and provides the link between the company and the battalion for maintenance of communications equipment.

(4) He is responsible for supervising all aspects of COMSEC equipment, to include requesting, receipting, training, maintaining, securing, and employing this equipment and materials.

(5) He advises the CO in planning and employing the communication systems. Based on the CO's guidance, he prepares or assists in preparation of paragraph 5 of the OPORD.

f. Radiotelephone Operators.

(1) The RATELO is responsible for operating and performing maintenance on his assigned radio to include preparation for special operations (waterborne, cold weather, airborne, or air assault).

(2) He encodes and decodes messages and makes field expedient antennas.

(3) The RATELO must understand the company mission. In the event the commander becomes a casualty, the RATELO may be the only man on the radio for a time. At these times, he may request and adjust artillery, and request medical evacuation or resupply.

(4) The RATELOs may assist in the preparation of the OPORD by copying the overlays and building sand tables.

g. Supply Sergeant.

(1) The supply sergeant requests, receives, issues, stores, maintains, and turns in supplies and equipment for the company. He coordinates requirements with the 1SG and the battalion S4.

(2) When positioned in the battalion field trains, the supply sergeant is supervised by the HHC commander or the support platoon leader. He uses the battalion administrative/logistical radio network to communicate with the company.

(3) He may also control the vehicle and driver when one is provided to the company.

(4) He monitors the tactical situation and anticipates logistical requirements. Chapter 8 has a more detailed discussion of the CSS requirements.

h. NBC Noncommissioned Officer.

(1) He assists and advises the company commander in planning NBC operations. He conducts and supervises the NBC training within the company (NBC decontamination and equipment maintenance and operation).

(2) He operates forward with the company CP and assists the communications sergeant with CP operations and security.

(3) His specific duties include the following:

- Provide the commander with unit operational exposure guidance.
- Process and disseminate information on enemy and friendly NBC attacks.
- Monitor and supervise decontamination operations.
- Make recommendations to commander on decon and smoke support.
- Requisition NBC specific items of equipment and supply.

i. Armorer.

(1) He performs organizational maintenance on the company's small arms. He evacuates weapons to the DS maintenance unit. Normally, he assists the supply sergeant in the BSA.

(2) He may operate forward with the company CP to support continuous CP operations.

j. **Antiarmor Section Leader.**

(1) He is responsible for employing the antiarmor section.

(2) He must be prepared to execute the following tasks with his section.

(a) Provide antiarmor support to the company during defensive and offensive operations, to include assisting the CO in planning the section's employment, reconnoitering tentative firing positions, and controlling antiarmor fires.

(b) Plan and lead reconnaissance, security, and combat patrol operations.

k. **Mortar Section Leader/Platoon Leader.**

(1) He is responsible for employing the mortar section.

(2) He ensures effective mortar support for the company. He also assists the CO in planning the employment of the mortar section, coordinates with the company FSO/FIST, and controls the section during tactical operations.

2-7. SUCCESSION OF COMMAND

The chain of command provides for the succession of command should leaders become casualties. The normal succession of command in the rifle company is commander, XO, platoon leaders by seniority, other combat arms officers, 1SG, and NCOs by seniority.

a. To reestablish the chain of command, the new commander establishes communications with the battalion and all elements of the company. He informs them of the situation, receives status reports from the company and any new orders from battalion, and continues operations. He issues FRAGOs as required.

b. The company tactical SOP should cover reestablishment of the chain of command. The allocation of radios and radio nets, and the location at which command is reestablished should be planned for during both static and mobile situations.

2-8. ORDERS GROUP

A standardized orders group assists the rapid planning and dissemination of orders. It also ensures all key personnel attend the OPORD. The orders group normally includes the XO, 1SG, commo chief, NBC NCO, company FSO, platoon leaders, antiarmor section leader, mortar section leader, and leaders of supporting units. The warning order includes when and where the orders group should assemble.

a. Based on guidance from the commander, members of the orders group prepare portions of the OPORD and briefing aids (sand tables, sketches, overlays, matrixes, and so forth). These activities are supervised by the XO or 1SG, freeing the commander to perform other duties (reconnaissance, a detailed estimate, rest, and so forth).

b. The unit tactical SOP should address the composition and duties of the orders group. For example, the 1SG can prepare paragraph 4 and the communications sergeant can prepare paragraph 5b.

2-9. COMPANY COMMAND POST

The company CP does not have a set organization. It consists of the CO and other personnel and equipment required to support the C2 process for a specific mission. It locates where the CO determines it can best support his C2 process. Its purpose is to provide communications with higher, lower, adjacent, and supporting units; to assist the CO in planning, coordinating, and issuing the company OPORDs; and to support continuous operations by the company. Often the CP must also provide its own security.

a. Normally, the CP consists of the CO and his RATELOs, the FIST HQs, the communications sergeant, and the NBC NCO. The XO, 1SG, armorer, reserve element leader, and the leaders of attached or supporting units may also locate with the CP.

b. When positioning the CP, the CO considers his communication requirements, the security needs for the CP, and above all, the location where he can best fight his company from.

(1) In static positions (assembly areas, battle positions, and so forth), a stationary CP location may be designated by the CO. This allows wire communications to be established with battalion and the units of the company, field expedient antennas to be set up, and fighting positions to be dug. It also provides a designated spot to which messengers can report. The CP should be off natural lines of drift and key terrain features. It must be well camouflaged from ground and air observation. Local security is provided, either by its relation to the rifle platoons, by collocating with the company reserve element, or by its own personnel. When the CO leaves the CP, the XO or the 1SG normally assume control.

(2) When moving, the CO designates where the CP will move (Chapter 3). At times, he may locate away from the CP. For example, to control the company's movement better, he may move with the lead platoon; or in the attack, he may locate with the main effort. In these situations, he may designate a part of the CP (his RATELOs or the FSO) to move with him.

c. The CP personnel also assist the commander by preparing parts of the company OPORD. They also—

- Provide recommendations or input during the planning.
- Receive and send required reports and SITREPS.
- Lay land lines to subordinate units.

d. The CP must be capable of conducting continuous operations. Section IV of this chapter provides additional guidance for conducting sustained and continuous operations. Because of the impact that stress and fatigue will have on the C2 process, commanders should consider the following:

- Organize and man the CP to allow continuous operations.
- Cross train personnel.
- Discuss critical decisions with the XO or 1SG.
- Set up a CP sleep plan and ensure compliance of it.
- Ensure key decision makers get sleep (do not wait until fatigue requires this—do it from the start).

Section II. COMMAND AND CONTROL PROCESS

The leader uses the command and control process to figure out what is going on, decide what to do about it, tell soldiers what to do, then keep track of how well his soldiers are doing. The troop-leading procedures are the leader's tools to guide the command and control process. These procedures provide a common framework for all echelons of command to apply the C2 process. Two other tools that are part of the C2 process are the estimate of the situation and METT-T analysis. The relationship of these three tools is depicted in Figure 2-1.

2-10. TROOP-LEADING PROCEDURES

The troop-leading procedures are the dynamic process by which a commander receives a mission, plans it, and executes it. It should be an instinctive and familiar way of thinking for a company commander. The sequence of the individual TLPs is not rigid. It is modified to meet the mission, situation, and available time. Some steps are done concurrently while others may go on continuously throughout the operation. The TLPs are time savers; as such, the leader conducts them in the order that most effectively uses the available time.

a. **Receive the Mission.** A mission may be received in the form of either a written or oral warning order, operation order, or fragmentary order. At times, a leader may deduce a change in mission, based on a change in the situation. When the battalion OPORD is issued, the company commander should have his company FSO with him.

(1) Once an upcoming mission is identified, actions to begin preparing the unit are conducted. The CO conducts an initial METT-T analysis to determine the requirements for his warning order.

(2) With the information available, the commander sets his time schedule by identifying the actions that must be done (time-critical tasks) to prepare his unit for the operation. These preparatory actions are identified by a preliminary consideration of the information on the mission, enemy, terrain, and own troops. An initial reconnaissance (may be a map reconnaissance) is conducted to allow the leader to more fully understand the time requirements for the mission. He then develops his time schedule by starting at "mission time" and working backward to the time it is now (reverse planning). The mission time is normally the most critical time in the operation.

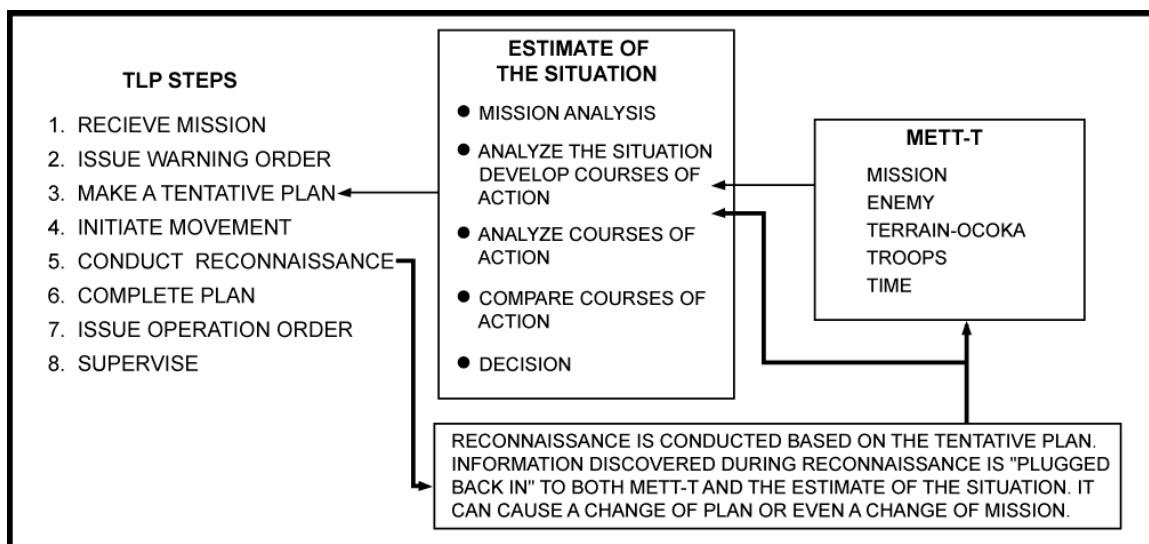


Figure 2-1. Tools of the tactician relationship.

(3) The commander must ensure that all subordinate echelons have sufficient time for their own planning needs. A general rule of thumb for leaders at all levels is to use no more than one-third of the available time for planning and issuance of the OPORD. This will leave the rest of the available time for subordinate leaders to use for their planning and preparation. This is a tentative time schedule, which may require adjustment as the TLP process continues.

- 0600, execute mission.
- 0530, finalize/adjust the plan, based on the leader's reconnaissance.
- 0400, establish ORP; begin leader's reconnaissance.
- 0200, begin movement.
- 2100, conduct platoon inspections.
- 1900, hold rehearsals.
- 1800, eat meals (tray packs).
- 1745, hold briefbacks (SLs to PL).
- 1630, issue platoon OPORD.
- 1500, hold briefbacks (PLs to CO).
- 1330, issue company OPORD.
- 1045, conduct reconnaissance.
- 1030, update company warning order, if required.
- 1000, receive battalion OPORD.
- 0900, receive battalion warning order; issue company warning order.

b. **Issue a Warning Order.** Do not wait for more information. Issue the best warning order possible with the information at hand and update it as needed with additional warning orders. The warning order lets units prepare for combat as soon as possible after being alerted of an upcoming mission. This normally involves a number of standard actions that should be addressed by SOP. The warning order should address those items not covered in the SOP that must be done to prepare for the mission. The specific contents for each warning order will vary, based upon the unique tactical situation. (Appendix G provides an example warning order.)

c. **Make a Tentative Plan.** Tentative plans are the basis for the OPORD. The leader uses the commander's estimate of the situation to analyze METT-T information, develop and analyze a COA, compare courses of action, and make a decision that produces a tentative plan. (See Section III for details on the estimate of the situation.)

d. **Initiate Movement.** This can be done by having a subordinate leader move the unit to an assembly area or attack position. The instructions for this move can be given in the warning order. The CO ensures that security is provided and fires are integrated for all company movements.

e. **Conduct Reconnaissance.** Reconnaissance is a continuous process during the TLP. The tentative plan should include an R&S plan. Plan and conduct reconnaissance to confirm or adjust the tentative plan. A thorough tentative plan helps the reconnaissance because specific R&S guidance can be given to subordinates. In every tactical operation the CO requires additional information, and at the same time, he must deny the enemy information about his company. These requirements provide the focus for the company R&S plan.

(1) *Prepare the plan.* The CO determines—

- What are his information requirements?
- What are his security requirements? (The higher headquarters may also assign R&S responsibilities to the company.)
- What are the priorities for these requirements?
- What assets are available to meet these requirements? (The CO may request support from higher, adjacent, and supporting units.)
- How much time is available to collect the information or establish security?
- What is most critical (and thus the focus) for his personal reconnaissance?
- To whom will he assign tasks to meet the R&S needs?

(2) *Issue the plan.* The CO provides additional instructions to supplement the assigned tasks to his subordinates. The amount of detail depends on the specific situation. A leader's reconnaissance that has several subordinate units involved requires more specific instructions. These may include the following:

- A specific tasking for selected soldiers from subordinate units, such as the 1st Platoon's RATELO.
- A specific time schedule for the reconnaissance (report, inspection, departure, and return times).
- Specified routes and formations.
- Special equipment required.
- Likely contingency plans.
- Fire support coordination.
- Withdrawal plan from the reconnaissance site.
- Link up with the company.

(3) *Select the technique.* The leader's reconnaissance is crucial to every operation. An effective leader reconnaissance provides the required information without being detected by the enemy. The risk of detection and the effect that this loss of surprise will have on the mission must be weighed against the benefit of collecting the information. Generally, the closer the reconnaissance element is to the objective, the greater the risk of detection. The two primary techniques for conducting the leader's reconnaissance are:

(a) Long-range observation/surveillance. Reconnaissance personnel generally stay beyond small-arms range from the objective. This will usually be outside the enemy's security positions also. Tentative OP sites are selected from a map reconnaissance and confirmed after the unit has occupied the ORP. This technique is generally more effective during daylight hours. When possible, OPs should provide 360-degree coverage and may require repositioning at night.

(b) Short-range observation/surveillance. This technique generally requires the reconnaissance personnel to move inside the enemy's security positions and small-arms fire range. It depends on stealth and effective use of available cover and concealment. Limited visibility may support this technique. OPs are also designated for short-range observation.

(4) *Conduct the reconnaissance.* The leader's reconnaissance should be conducted as any reconnaissance patrol; only essential personnel should take part. The smaller this element is, the less likely the enemy will detect them. This should include a leader from each of the key elements. Additional tasks during the reconnaissance may include:

- Testing communications if authorized.
- Making final coordination on precise timings, signals, weapons/personnel locations, and sub-unit responsibilities.
- Establishing security/surveillance on the objective area.

f. **Complete the Plan.** The CO must be prepared to adjust his tentative plan based on the results of the reconnaissance. He may have to change COAs if the situation is not what he expected. In this case, one of the previously analyzed and discarded COAs may be adjusted to quickly finalize his new plan. Coordination continues with all supporting agencies, higher headquarters, and adjacent units. This, along with his recon, gives the leader the information he needs to expand the tentative plan into a five-paragraph OPOD. (See OPOD format, Appendix G.)

g. **Issue the Order.** Preferably issue the order while viewing the avenues of approach/objective area. Make maximum use of visual aids (sketches and terrain models) to enhance the presentation of the order. When the CO issues the tentative plan before the leader's reconnaissance, he issues a FRAGO to finalize the plan prior to execution (see Appendix G).

h. **Supervise.** The best plan may fail if it is not managed right. Briefbacks, rehearsals, inspections, and continuous coordination of plans must be used to supervise and refine troop-leading procedures. Briefbacks and rehearsals are not the same; briefbacks focus on the planning process, and rehearsals focus on execution.

(1) *Inspect.* During pre-combat inspections, check—

- Weapons and ammunition.
- Uniforms and equipment.
- Mission-essential equipment.
- Soldiers' knowledge and understanding of the mission and their specific responsibilities.
- Communications.
- Rations and water.
- Camouflage.

(2) *Rehearse.* Rehearsals are always conducted. They are essential to ensure complete coordination and subordinate understanding. The warning order should provide

subordinate leaders sufficient detail for them to schedule and conduct rehearsals of drills/SOPs before receiving the company OPORD. Rehearsals conducted after the OPORD can then focus on mission specific tasks. Rehearsals are conducted as any other training exercise except the training area should be as much like the objective area as possible, including the same light and weather conditions. Mock-ups of the objective should be used for these practices. Rehearsals include holding soldier and leader briefbacks of individual tasks and using sand tables or sketches to talk through the execution of the plan. These are followed by walk-through exercises and then full-speed, blank-fire or live-fire rehearsals. The CO should establish the priority for rehearsals based on the available time. The priority of rehearsals, as COA development, flows from the decisive point of the operation. For example, actions on the objective, battle drills for maneuver, actions on enemy contact, special teams, movement techniques, and others as required. Security must be maintained during the rehearsal.

(3) *Briefback*. Subordinates should briefback the commander right after the OPORD to ensure they understand their instructions. Briefbacks of the subordinates' plans should also be conducted. These briefbacks may be given collectively at a meeting of the orders group. Such a technique allows exchange of information, coordination among units, and rapid distribution of changes to the initial plan.

(4) *Coordinate*. The commander visits his subordinates and adjacent units to discuss their plans. The CO ensures that all necessary preparations are being made. These may include coordination of fire support and engineer activities, maintenance, resupply, movement, and other required actions.

(a) Any departures from the plan, both before and during the operation, are coordinated with the battalion commander and staff.

(b) During execution, the CO issues FRAGOs to modify or refine the operation as the situation develops. He personally supervises and or leads the critical actions.

2-11. COMMUNICATIONS

The CO communicates to control his platoons and weapons, to gather and pass information, and to call for fires. He ensures required communications are available and functioning.

a. The CO analyzes each situation to determine the effect that the terrain, weather, and enemy may have on his ability to communicate. He reduces these effects by proper positioning of units, establishing visual signals for critical events, requesting a relay site be established by the battalion, and other similar measures. The best way to limit these effects is to reduce the need for communication throughout the operation by developing a simple plan, which requires the least amount of command intervention during the execution.

b. Several means of communications should be planned so the company does not depend on only one. Considerations in selecting means of communications are:

- How long does it take to install?
- How long does it take to send a message?
- How vulnerable is it to enemy action?
- How critical is it to communicate? On which net? At what time?
- How reliable is it?
- What does it cost in resources?

c. There are several means available to the CO. He should use each of them, as appropriate, to complement each other. They are radio, wire, visual signals, sound, and messenger.

(1) *Radio*. This is probably the most common means of communications. Radios are well suited for use when the company is on the move or in an attack. Different units often have different types of radios, but the basic company command net remains about the same (Figure 2-2). The CO normally has two radios—one for the battalion command net and the other for the company command net. He may operate from his vehicle (if assigned), which is equipped with two vehicular-mounted radios. He normally has a speech security device for secure communications on the battalion command net. The XO and platoon leaders have a radio for communications with the CO. Although most infantry companies have a radio available for the XO (three in the company headquarters), the lack of a RATELO and the limitations of the radio often limit the ability of the XO to maintain communications with higher and adjacent units. When planning radio communication, the CO considers several factors.

(a) Constant radio contact is not essential for all operations. Often, due to the terrain, radio limitations, and type of operation, radio contact will be lost. At other times, signal security will require radio listening silence be imposed. The CO must determine when and where communication will be critical during the operation and then ensure the required units can communicate.

(b) He must think through the movement of the company to ensure that he knows when the terrain may disrupt radio communications. The key lies in maintaining line-of-sight within the planning ranges of his radios. These ranges can be extended two to three times through the use of field expedient antennas (FM 24-18). When required, the CO may establish or request battalion to set up a relay site.

(c) He must ensure that all leaders know what to do in the event radio communications are lost. Redundant communications are provided through the company fire support net, if it is needed. This should be done only as a last resort.

(d) Many infantry companies have the capability to operate a secure company net. This decision should be based on the enemy threat and balanced against the soldier's load and the possible loss or capture of this equipment.

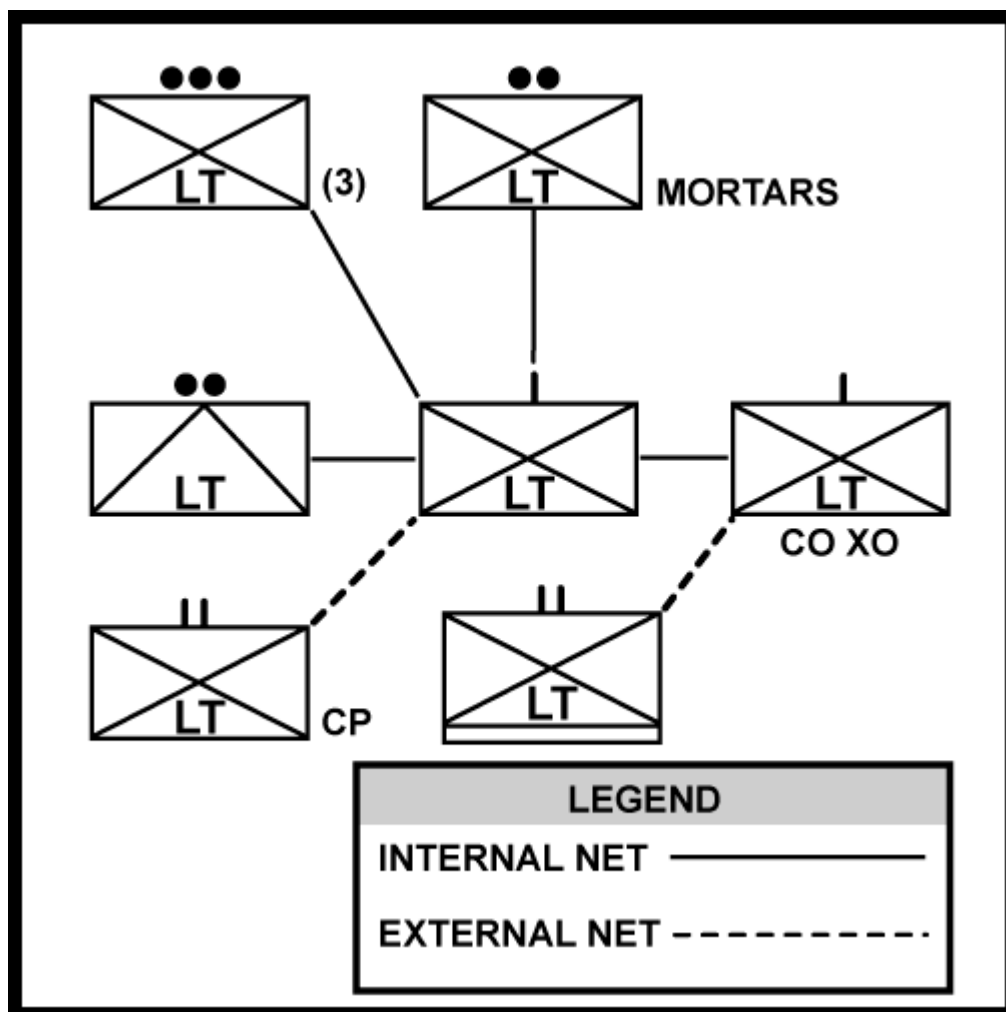


Figure 2-2. Company command net.

(2) *Wire.* Wire is more secure than radio. Wire usually provides better communications because it is less subject to interference from weather, terrain, and man-made obstacles. It is not subject to enemy electronic warfare actions, such as jamming and direction finding. It is, however, subject to breakage by direct and indirect fire and ground traffic.

(a) Although wire is more secure, it can be tapped, so transmissions must be kept secure. The time needed to install it depends on the terrain, the weather, the length of the lines, and the way they are laid. As wire can be easily broken by weapons fire, it should be buried when possible. In areas heavily traveled by vehicles, wire that cannot be buried should be put overhead. Wire lines must be checked frequently and repaired as required.

(b) The decision to use wire depends on the company's mission, amount of wire and time available, and the company's capability to install and maintain it. Most infantry companies have limited amounts of wire. Only the H-series infantry has adequate wire, equipment, and personnel to routinely use wire as the primary means of communication. The CO must prioritize the communication needs and use the available wire where required.

(c) As with the company's radio net, different types of rifle companies have different types of wire equipment. However, the company wire net normally includes the same leaders as does the company command radio net (Figure 2-3).

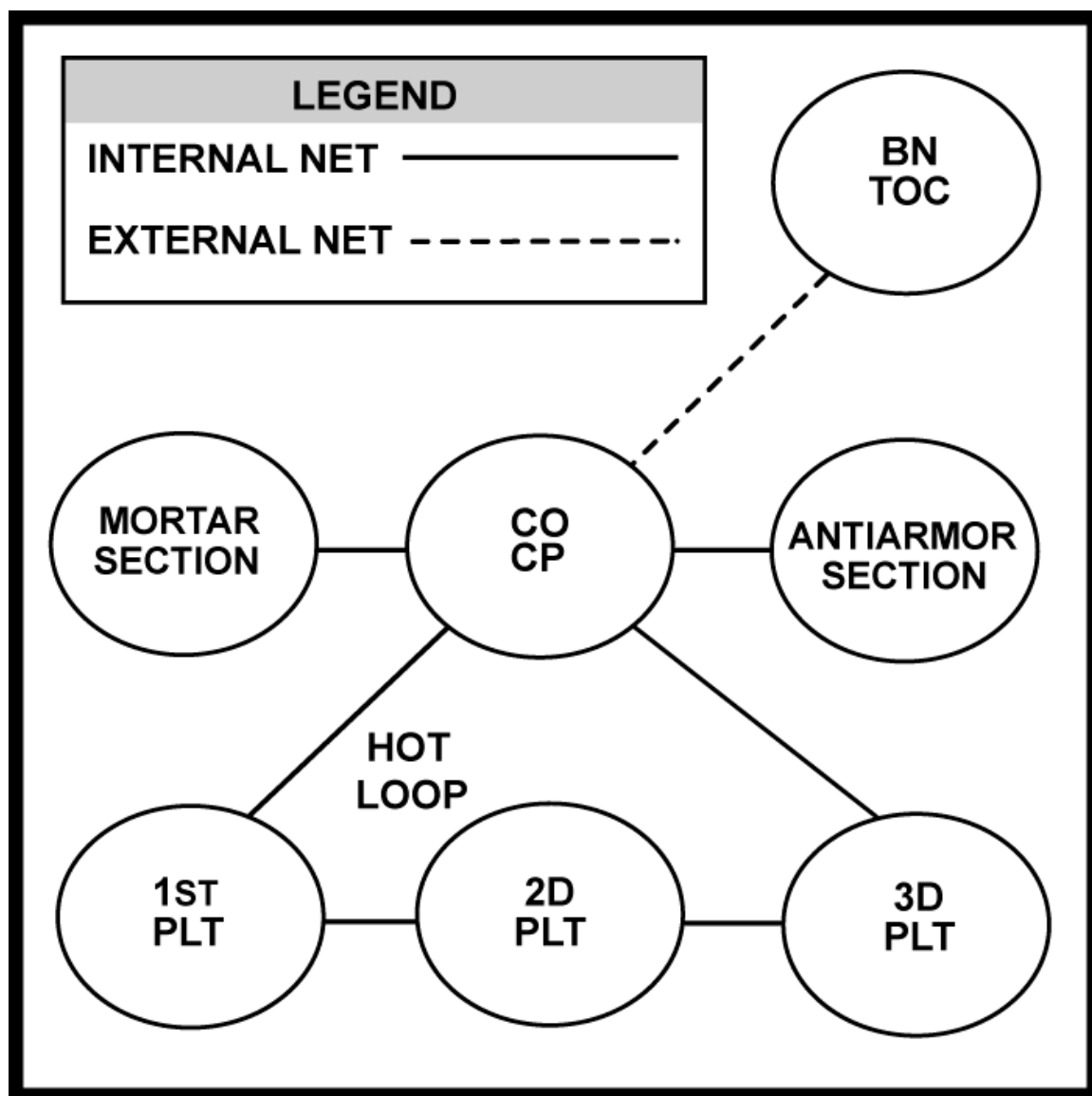


Figure 2-3. Company wire system.

(3) *Visual signals.* The company commander may use visual signals to send prearranged messages quickly and to identify friendly units. They include arm-and-hand signals, flags, panels, lights, weapon fires (both direct and indirect) and pyrotechnics. He may use visual signals to identify friendly positions for aircraft. Visual signals, however, may be seen by the enemy or be misunderstood by friendly units.

(a) Pyrotechnics are available in several types and colors. They include smoke grenades, smoke streamers, star clusters, star parachutes, and a variety of artillery and mortar rounds. The commander uses pyrotechnics for signals, friendly unit identification, fire control, target marking, and ground-to-air communications. Pyrotechnic signals may

be prescribed by the SOI, SOP, or the OPORD. Their advantage is the speed with which information can be transmitted.

(b) Combinations of colors fired at the same time or in a series increase the chance of error, as it is easy to miss part of a series.

(c) Visual signals may be seen by the enemy as well as by friendly units. The enemy may even imitate friendly signals. Therefore, visual signals should not be trusted fully unless the signaler can be identified.

(4) *Sound*. The company commander may use whistles, sirens, gongs, shots, and explosive devices for sound communications. These can attract attention, transmit prearranged messages, and spread alarms. Sound signals are usually good for short distances only. Their range and reliability may be further reduced by battle noise. Sound signals must be simple to avoid misunderstandings. Meanings for sound signals should be stated in the unit SOP and SOI.

(5) *Messenger*. Aside from personal contact, messengers are the most secure and reliable communications means. Messengers should always be available at the company CP. They are ideal for transmitting lengthy written messages. Their speed depends on their mode of travel, the tactical situation, and terrain. They are vulnerable, however, to enemy action in forward areas, and they lack sender-to-receiver contact. Hard copy messages are preferred over oral messages. If oral messages are sent, have the messenger repeat the message to ensure he understood. At times, the platoons may be tasked to provide a messenger to the company CP.

2-12. ELECTRONIC COUNTER-COUNTERMEASURES

The ECCM are those things the company does to defeat enemy electronic warfare efforts. Although the company is not usually the focus of intercept, jamming, or direction finding systems, proper COMSEC procedures are required by all radio operators. At company level, ECCM consists mainly of proper communications security and antijamming techniques. Although the SINCGARS radios have built-in ECCM features, units still use proper COMSEC procedures.

a. **Communications Security**. The use of COMSEC delays or stops the enemy from gaining information from radio transmissions. It includes the following:

- Authenticating.
- Using only approved codes.
- Changing frequencies and call signs, when specified.
- Designating periods for radio listening silence.
- Restricting the use of radios.
- Using the lowest transmitting power possible.
- Enforcing net discipline and proper radiotelephone procedure.
- Using only authorized call signs and prowords.
- Limiting transmissions to official traffic.
- Keeping transmissions short.
- Selecting radio sites with hills or other obstructions between them and the enemy.
- Using directional antennas when possible.

b. **Antijamming Procedure**. Radio operators should use the following antijamming procedures to defeat enemy jamming efforts.

(1) *Recognition.* The first thing an operator must do when his radio receives interference is to find the cause. He should not immediately assume jamming. Some jamming is similar to other types of radio interference. To help identify the problem, the operator should remove the antenna. If the interference decreases with the antenna removed, then its cause is external and may be jamming. If the interference does not decrease, the problem is in the radio.

(2) *Continued Operation.* An operator must continue normal radio operation once jamming has been identified so that the enemy will not know that his jamming is working. The rule is: During jamming, continue operating unless ordered by the net control station to shut down or to change frequencies. An operator being jammed should never mention over unsecured radio that he is being jammed. If the company cannot continue to operate on the jammed net and also continue the mission, they should switch to the antijamming frequency and continue the mission.

c. **Reporting.** Report all jamming using the meaoning, intrusion, jamming, and interference report. The MIJI report should be sent by another secure means of communications; for example, wire or messenger. A MIJI report format is usually found in the SOI or unit TACSOP and contains the following:

- Date and time of jamming.
- Frequencies jammed.
- Type and strength of jamming signal.
- Designation of the unit making the report.

Section III. THE ESTIMATE OF THE SITUATION

The estimate of the situation is the Army's decision-making process. It helps the leader determine his mission, understand his situation, and select the best course of action to accomplish his assigned responsibilities. Leaders use the estimate for EVERY tactical decision. Their experience, ability, and the time available will determine the amount of detailed analysis in each estimate. The estimate is a continuous process; the CO constantly receives information about the situation. Whenever he receives the information (during planning, en route to the objective, or just before the assault begins), he must decide if this information affects his mission. If it does, then he decides how to adjust his plan to meet this new situation. It is only through the estimate process, however hasty, that the leader can make the proper decision. The estimate has five steps.

Step 1: Conduct a detailed mission analysis.

Step 2: Analyze the situation and develop courses of action.

Step 3: Analyze courses of action (wargame).

Step 4: Compare courses of action.

Step 5: Make a decision.

2-13. CONDUCT A DETAILED MISSION ANALYSIS

Leaders conduct a detailed mission analysis whenever they receive instructions to begin a new operation. These instructions may be received as warning orders, OPORDs, or FRAGOs. The leader may also deduce a change to his mission based on a change in the situation. In any case, the CO conducts the mission analysis to determine the following:

- Commander's concept and intent (battalion and brigade).
- All tasks his unit must accomplish.

- All limitations on his unit's freedom of action.
- His unit's restated mission statement.

a. **The Higher Commanders' Concept and Intent.** The company commander must know what both his battalion and brigade commanders want accomplished as the result of the operation. He must also understand his role and responsibilities within their concepts. This information is found in the battalion OPORD in paragraph 1b for the brigade and in paragraph 2 and 3 for the battalion.

b. **The Unit's Tasks.** The CO determines all the tasks that his unit must accomplish; they may be found throughout the order. Tasks that are clearly stated in the order, during the oral OPORD, or on the operation overlay are called specified tasks. Examples of specified tasks are:

- Retain hill 545 to prevent envelopment of B Co.
- Provide one squad to the 81-mm platoon to carry ammo.
- Establish an OP vic GL124325 NLT 301500 NOV 89.

(1) In addition to these specified tasks, other requirements may become apparent as the OPORD is analyzed. These are called implied tasks; they are not routine or SOP-type requirements. Nor are they requirements inherent to other assigned tasks or to military operations. Routine or SOP tasks depend on the specific unit, but generally the following type tasks would be considered routine:

- Provide security during movement.
- Conduct resupply operations.
- Coordinate with adjacent units.

(2) If the company was assigned a mission to seize an enemy position for some purpose, some examples of inherent tasks might be as follows:

- Task-organize the unit to accomplish the mission.
- Conduct reconnaissance to locate enemy weak points.
- Isolate the area at the point of attack.

(3) In some cases or for some units, tasks that should be routine, inherent, or SOP may not be. In this case, the CO (understanding the training and limitations of his unit) would identify that task as an implied task. It is not important to classify the tasks. What is important is to identify all the requirements (tasks) that the unit must complete to accomplish its mission. Once the CO identifies these tasks, he then ensures that his plan includes all of them.

c. **The Unit's Limitations.** The CO next determines all control measures or instructions in the OPORD that restrict his freedom of action; these are called limitations. In every operation, there are some limitations on the company. The operations overlay has graphic control measures that restrict the unit's freedom to maneuver. The coordinating instructions often include limitations. Throughout the order, there may be specific times that the unit must meet. The following are some examples of common limitations:

- Cross the LD at 100030 OCT 94.
- MOPP4 in effect.
- ADA weapon status, tight; warning status, yellow .

At times, it may be confusing whether something is a task or a limitation. The first example given above is both a specified task (cross the LD) and a limitation (at exactly

0030 hours on 10 OCT). What is important is that the information is included in the CO's concept, and that all subordinates understand and comply with it.

d. **Mission-Essential Task(s).** After reviewing all the above factors, the CO identifies his mission-essential task(s). Failure to accomplish a mission-essential task results in the company's failure to accomplish its primary purpose for that operation. In a well-written OPORD, the CO will find his mission-essential task in the maneuver paragraph.

e. **The Restated Mission Statement.** If the mission analysis began as the result of receiving a battalion OPORD, the mission statement should have been clearly stated in the battalion concept of the operation, (paragraph 3a). The mission essential tasks and purposes for each of the companies should be stated in the battalion scheme of maneuver.

(1) If the mission analysis began as the result of a short FRAGO or a significant change to the situation, the company's mission may not be clearly stated. In this case, the commander must determine his mission essential task. He does this by reviewing the battalion commander's concept and determining what his companies role is for the decisive action. What must his unit achieve to support the battalion's mission accomplishment? The relationship of his unit to the battalion's main effort may also clarify his mission essential task. If his company is the main effort, there should be a direct relationship between his purpose and the battalion's purpose. If the CO reviews each of his assigned tasks by this process, it should be clear which task is essential to the success of the battalion commander's concept.

(2) Time is continuously analyzed during the operation. Once the CO has conducted his mission analysis, he has a better understanding of the time requirements for his unit. If a time schedule was issued prior to conducting the detailed mission analysis, it may need to be updated now.

(3) The restated mission statement becomes the focus for the remainder of the estimate process. This is a clear, concise statement of the essential task(s) to be accomplished by the company and the purpose to be achieved. The mission statement will normally state WHO (the company), WHAT (the task), WHEN (the critical time), WHERE (usually a grid coordinate), and WHY (the purpose the company must achieve). It also becomes paragraph 2 of the company OPORD. The other specified and implied tasks and limitations are included in the plan where required. Some examples of restated missions follow:

- (WHO)"A Company attacks (WHEN) 090500Z Dec 92 (WHAT) to seize HILL 482 (WHERE) vicinity NB 457271 (OBJ BLUE) (WHY) to enable the battalion's main effort to destroy enemy command bunker and reserve platoon."
- (WHO)"C Company defends (WHEN) NLT 281530Z Oct 97 (WHAT) to destroy enemy forces (WHERE) from AB163456 to AB163486 to AB123456 to AB123486 to (WHY) prevent enemy forces from enveloping 1-66 Infantry (L) from the south."

2-14. ANALYZE THE SITUATION

With the restated mission statement from Step 1 to provide focus, the CO continues the estimate process. Step 2 involves analyzing the situation, using the remaining factors of METT-T (enemy, terrain, troops and time). The IPB integrates the enemy doctrine with the terrain and weather to evaluate enemy capabilities, vulnerabilities, and possible COAs. FM 7-20 discusses the IPB process in detail.

a. Once the CO has a full appreciation for the situation, he then develops several COAs that will accomplish his mission. Throughout this section, the analysis process is presented in a very deliberate, step-by-step manner. In reality, it is a very dynamic process. For example, this section describes the terrain analysis coming before the enemy analysis. In a tactical situation, the commander will normally have a great deal of knowledge about the enemy. In effect, this allows a more rapid estimate and decision. What must be avoided is jumping to a hasty conclusion/decision without first doing an honest analysis of the situation. Step 2 is normally the most time consuming step of the estimate.

b. During the analysis, the CO determines facts about the situation. He also determines questions for which he has no facts. He then tries to answer these questions through additional analysis or reconnaissance. When these questions impact on his ability to develop valid courses of action, he must plan from assumptions.

(1) Assumptions are used in the absence of facts. They are based on the facts that he has developed, his knowledge of the enemy's doctrine, and also his experience from fighting this enemy. An example of a valid assumption might be: The enemy has prepared antipersonnel minefields on the dismounted avenues of approach into his position. Possible minefield locations can then be deduced based on the enemy's doctrine and the CO's knowledge of his tactics. During this analysis, assumptions are treated as facts to allow the CO to deduce the impact they may have on his unit. The CO reduces the number of assumptions by conducting reconnaissance to gather the required facts.

(2) The CO also analyzes the facts to determine how they impact on his mission, on his unit, and on the enemy. For example: The CO's terrain analysis identifies a creek that is an obstacle to mounted movement. The CO analyzes this fact to deduce the impact it may have on the operation. If he is defending, he must determine how the creek will affect the enemy's movement. It may only be an obstacle to wheeled vehicles and not to tracked ones. Are there choke points along the obstacle which would allow him to concentrate combat power against the enemy? How will the obstacle affect friendly units? Is vehicle resupply and casualty evacuation possible forward of the creek or will he have to use soldiers to move supplies and casualties? How can this obstacle assist in the accomplishment of his mission? The quality of these deductions will determine the effectiveness of the courses of action developed later in Step 2. Figure 2-4 shows this analysis process for Step 2.

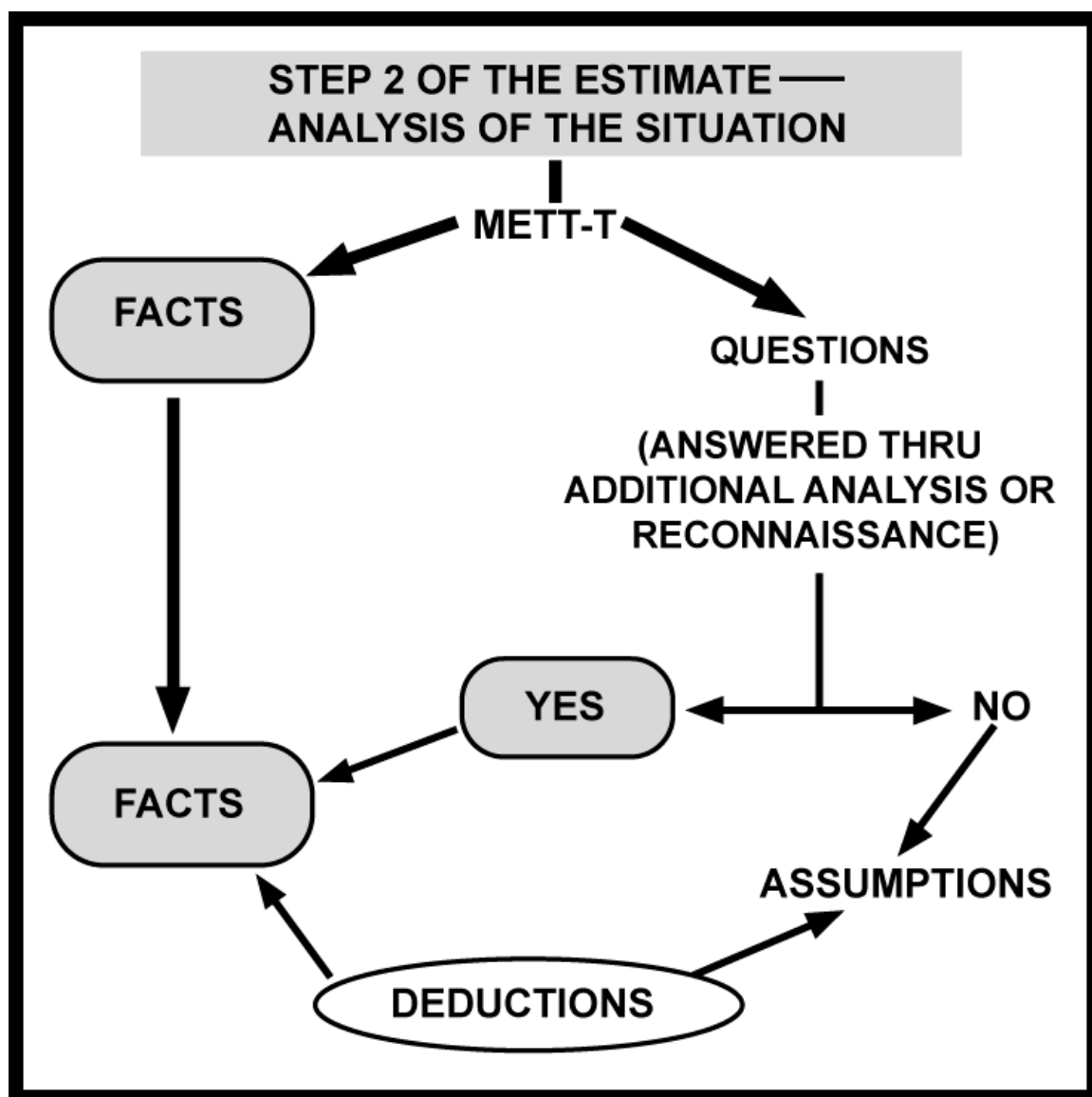


Figure 2-4. Analysis process.

(3) Throughout Step 2, the CO identifies potentially decisive points where he can generate superior combat power in relation to the enemy. These points may result from his terrain analysis (locations on the ground which provide an advantage or put the enemy at a disadvantage), from the enemy analysis (an identified enemy weakness that can be exploited), or possibly from the time analysis (a time when the combat potential of the enemy force is degraded). Ideally, a decisive point will be identified where an enemy weakness is positioned at a time and a location that allows the company to generate overwhelming combat power. These points are potentially decisive because the effects of the company's combat potential, when applied there, should lead to accomplishing the mission.

2-15. ANALYZE THE TERRAIN

The factors of METT-T guide the leader through the estimate process. Although the first factor is mission analysis, the next factor analyzed should be the terrain, not the enemy. By understanding the terrain prior to the enemy analysis, the leader will have a better appreciation for the enemy's capabilities and limitations.

a. The leader considers the terrain from both his view-point and from the enemy's. The battalion assigns the company its area of operations. If there is terrain or enemy units outside the assigned AO that could impact on the mission, the leader must be concerned with them. This terrain, including the area of operations, is called the area of interest. The leader conducts a detailed terrain analysis of this area.

b. The mnemonic OCOKA provides the significant military aspects of the terrain. These will assist the leader with his terrain analysis. In order, analyze obstacles, avenues of approach, key terrain, observation and fields of fires, and cover and concealment. Because of the effect that the weather has on the terrain, it is analyzed at the same time.

(1) *Obstacles*. Identify the existing and reinforcing obstacles and hindering terrain that will affect mobility. All terrain is evaluated and coded as either NO-GO, SLOW-GO, or GO. When time permits, a combined obstacle overlay is developed to graphically depict the mobility capability of the terrain. Figure 2-5 shows an example of a combined obstacle overlay.

- NO-GO terrain is impractical for the type of force being considered to move through it. NO-GO terrain does not always mean that units cannot pass through that terrain, but only that the speed of movement will be substantially reduced unless considerable effort is expended to enhance mobility. (Example: nonfordable stream and slopes of greater than 45 degrees for mounted movement.) With mounted forces, this would mean substantial engineer support.
- SLOW-GO terrain hinders ground movement to a lesser degree than NO-GO terrain. Little effort is needed to enhance mobility. (Example: sparsely vegetated forests and fordable streams.)
- GO terrain is fairly open terrain that presents no problem to ground movement.

(a) Offensive considerations:

- How is the enemy using these obstacles?
- How will these obstacles affect my movement?
- Where are the weapons/units that are covering these obstacles?
- How can the company avoid these obstacles?

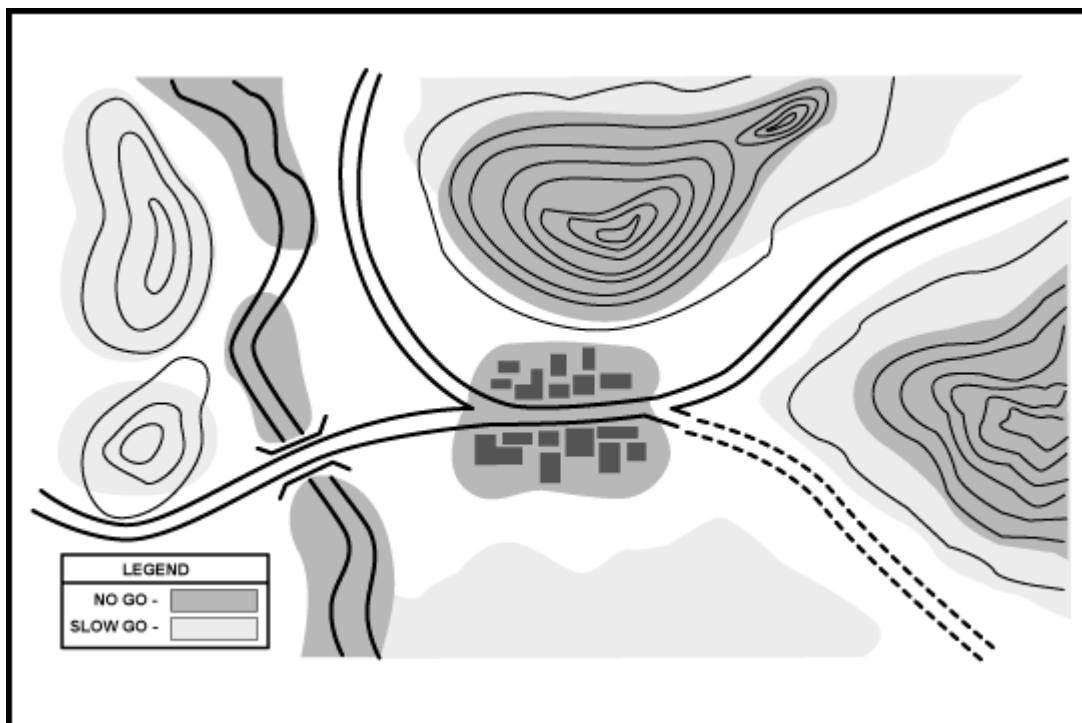


Figure 2-5. Combined obstacle overlay.

(b) Defensive considerations:

- How will the existing obstacles affect the enemy?
- How do the existing obstacles support my mission?

(2) *Avenues of approach.* Avenues of approach are developed next and identified one level down. These are areas through which a unit can maneuver. Normally, they are thought of in terms of mounted movement, but they can be applied to dismounted movement as well. Both mounted and dismounted avenues of approach must be identified. When selecting them, the commander uses tactical judgment with respect to the type unit to be used. They traverse GO terrain, bypass NO-GO terrain, and occasionally pass through or over SLOW-GO terrain. They are considered for both the enemy and friendly units. As such, a doctrinal width guideline for a platoon is 250 meters, a company is 500 meters, and a battalion is 1,500 meters. Aerial and subterranean avenues must also be considered.

(a) Offensive considerations:

- How can these avenues support my movement?
- What are the advantages/disadvantages of each? (Consider enemy, speed, cover, and concealment.)
- What are the likely enemy counterattack routes?

(b) Defensive considerations:

- How can the enemy use these approaches?
- Which avenue is most dangerous? Least? (Prioritize each approach.)
- Which avenues would support a counterattack?

(3) *Key terrain.* Key terrain is any location or area that the seizure, retention, or control of affords a marked advantage to either combatant. Using the map and

information already gathered, look for key terrain that dominates avenues of approach or the objective area. Next, look for decisive terrain that if held or controlled will have an extraordinary impact on the mission. The retention or seizure of decisive terrain is necessary for accomplishment of the mission. During the war-game process, other terrain may be identified as potentially key or decisive, based on likely changes in the situation. By this analysis, the commander should get a good feel for potential positions for friendly and enemy units and weapon systems. These locations are important during the development of COAs.

(a) Offensive considerations:

- Is the enemy controlling the key terrain? How?
- How does this terrain affect my mission?
- How can I gain control of this terrain?

(b) Defensive considerations:

- What advantage do I gain by controlling the key terrain?
- How can the enemy gain control of this terrain?

(4) *Observation and fields of fire.* Determine locations that provide the best observation and fields of fire along the approaches, near the objective, or on key terrain. Determine the potential of friendly or enemy forces to overwatch or support (with direct fire) the movement of their forces, and to observe movement along the avenue of approach and place fire on it from various positions on the terrain. The analysis of fields of fire is mainly concerned with the ability to cover the terrain with direct fire. Positions with good observation for the FIST personnel are also identified. Look at the capability of direct fire weapons from likely or known positions. Reconnaissance from the enemy's viewpoint is most effective when conducting a defensive analysis. Determine where fires may be concentrated.

(a) Offensive considerations:

- What are the fields of fires and observation for enemy weapons on or near the objective? En route?
- Is there any dead space around the objective? On the approaches into it?
- What are the fields of fires and observation from likely support positions?
- Where can the enemy concentrate fires? Where is he less able to concentrate his fires?

(b) Defensive considerations:

- What locations provide good fires and observation on the enemy approaches?
- How obvious are these positions to the enemy?
- Determine possible locations for the key weapons (M60 MGs, Dragons, mortars).

(5) *Cover and concealment.* The analysis of cover and concealment is often inseparable from the fields of fires and observation. Weapon positions must have both to be effective and to be survivable. Infantry units are capable of improving poor cover and concealment by digging in and camouflaging their positions. When moving, the terrain is used to provide cover and concealment.

(a) Offensive considerations:

- Determine the routes with good cover and concealment.
- Identify areas along the approaches to the objective with poor cover and concealment.

- Consider the use of smoke missions/limited visibility to provide concealment.
- (b) Defensive considerations:
- Focus on the locations with good fields of fires.
 - Think about how the enemy can use the available cover and concealment.
- c. Weather factors are considered at the same time as terrain. Primary emphasis is on temperature/humidity, precipitation, wind, cloud cover and visibility. Light data is considered as part of cloud cover and visibility. The commander focuses on how the weather affects the terrain, equipment, and soldiers of both forces.
- (1) *Terrain*. The terrain is most affected by rain, snow, or freezing temperatures. GO terrain may become NO-GO terrain after a heavy rain because it will no longer support vehicle movement. Freezing this same terrain may revert it to GO terrain if it will now support vehicles. The frozen ground may prevent digging fighting positions.
- (2) *Equipment*. The temperature and humidity can change the amount of maintenance required to keep equipment operating. Batteries may not last as long. The soldiers' clothing and boots wear out faster under some conditions.
- (a) Vehicles. Aviation assets are grounded by a number of weather conditions. Vehicles freeze to the ground or fail to start in extreme cold. Hot and dusty conditions increase the maintenance needs.
- (b) Weapons. The operation and maintenance of weapons are affected by extreme temperatures. Even if the weapon is not affected, the capability to acquire targets may be severely degraded. High winds affect the accuracy of all projectiles particularly indirect fires.
- (3) *Soldiers*. The spirit and morale of the soldiers are affected by the conditions they fight in. In winter zones, more energy and resources may be spent on just surviving the elements than fighting the enemy. Nonbattle casualties may outnumber the battle casualties.

2-16. ANALYZE THE ENEMY

Often, a major portion of the enemy analysis has already been completed for the company commander by the brigade and battalion S2s, who had access to much more information. The important enemy information is provided to the company commander in paragraph 1a of the OPORD. The CO must accept this information as accurate because it is what the battalion commander based his concept on. If a company commander developed his concept based on a different enemy COA, he could disrupt the entire battalion plan. Therefore the company commander begins his enemy analysis from the information provided by battalion. However, it is important to realize that the battalion S2's analysis did not focus on the enemy expected in the company's sector or the company's portion of the objective. He was looking at the situation from a broader perspective and with different concerns. It is the company commander's responsibility to refine this information to develop the detailed understanding required to complete his concept. The focus of this analysis is to locate the enemy's strengths (to avoid them) and his weaknesses (to exploit them). The end result of the enemy analysis should be a detailed statement of the enemy's most probable COA. At this point, the commander analyzes the enemy's composition, disposition, recent activities, reinforcement capabilities, possible courses of action, and weaknesses.

a. **Composition.** This is an analysis of the forces and weapons that the enemy can bring to bear. Determine their strength, what weapons systems they have available, and what additional weapons and units are supporting him. The CO must know the enemy's weapons as well as his own. It is this detailed knowledge of the specific characteristics for each weapon that allows the leader to pinpoint the enemy's weaknesses.

b. **Disposition.** The enemy's disposition is how he is arrayed on the terrain, such as in defensive positions, in an assembly area, or moving in march formation. Use enemy doctrinal templates to develop situational templates. Consider how long the enemy has to prepare his defense or attack. When analyzing the situational templates, search for his weak points, which may be exploited to destroy him or to control the decisive ground. Consider where he is accepting risk and where the terrain limits his ability to defend, attack, or gain mutual support. Finally, determine what his intentions are.

c. **Recent Activities.** Identify recent and significant enemy activities that may indicate future intentions. These activities may point out a weakness that the company can exploit. They may also provide a better understanding of what the enemy is likely to do in reaction to the company. This will result in a more effective war-game process.

d. **Reinforcement Capabilities.** Determine positions for reserves and estimated time to counterattack or reinforce. Although the enemy analysis must focus on the enemy force on the company's objective or expected in the company's sector, the CO should consider all enemy forces in his area of interest. To fully understand his enemy force, the CO must understand how the enemy he is fighting fits into the larger enemy force.

e. **Possible Courses of Actions.** Determine the enemy's possible COAs. Analyzing these COAs may ensure that the friendly unit is not surprised during execution. Determine the enemy's most likely COA; use the other possible COAs to develop contingency plans or security taskings. Develop a narrative description and sketch of the enemy COA from start to finish. Examples of enemy COAs follow.

(1) "The enemy will continue to defend with one platoon in a deliberate defense vicinity of HILL 482 oriented to the north and west. Two squads and two MGs are oriented north overlooking a mounted avenue of approach. One squad and one MG is oriented west against a dismounted approach. The platoon CP is on the topographical crest of Hill 482. There are between 20 and 30 personnel in this position. A minefield is located NW of the position at the bottom of the hill. A suspected minefield is west of the position. The confirmed OP is rotated every 8 hours. Security patrols (5 to 7 men) operate north and west of the position at random intervals. An OP is positioned vicinity of HILL 524. Suspected OP locations are at the trail intersection NW of the platoon and on the trail SW of the platoon. We can expect the enemy platoon to retain its position to prevent its parent company from being enveloped from the NW. If forced to withdraw, he will most likely move to the SE where there are supporting fires from the parent company. This company could reinforce the platoon position with up to 20 men in 20 minutes. Figure 2-6 is a situational template of this enemy position.

(2) "The enemy will attack NLT 120800 Dec 87 to seize the high ground vicinity HILL 464 with two MRC (+) conducting the main attack in prebattle formation along avenue of approach C, and one MRC (+) in the second echelon. The CRP and FSE will arrive first and attempt to locate gaps in our defenses. At PL YANKEE, the MRB main body will assume attack formation with tanks leading and will attempt to seize their objective mounted. Specific objectives for the lead MRCs will most likely be the

intersection at GL123456 and HILL 464. Artillery concentrations will be fired on Hill 464 as he crosses PL YANKEE. Smoke will be used to screen his left flank. Although he has the capability to employ chemical weapons, this is not likely. After seizing these objectives, the enemy will continue the attack to seize objectives along the battalion rear boundary. I expect BTR and BMP recon vehicles in our sector within the next 24 hours."

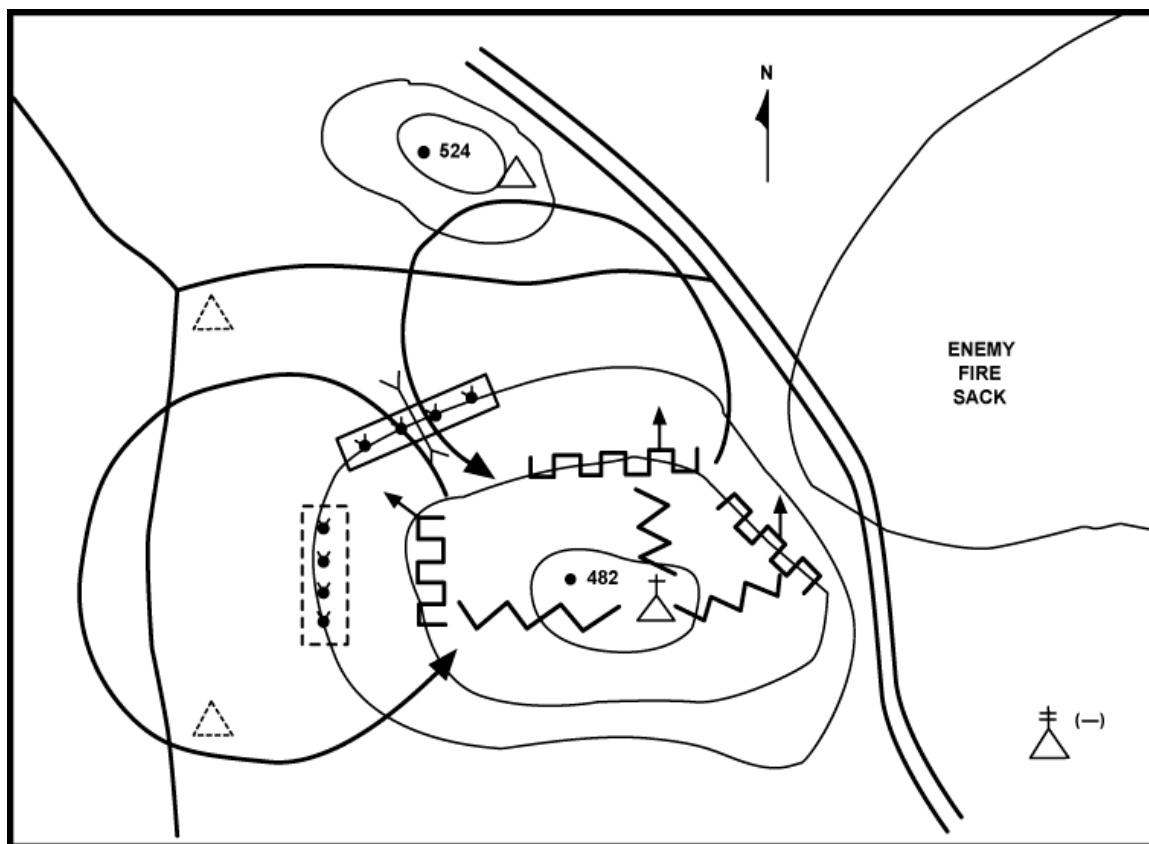


Figure 2-6. Enemy situational template.

NOTE: In addition to a narrative COA statement for the enemy, the commander develops a situational template of how he expects the enemy COA to look. For example, in the offense, a company commander develops a situational template that depicts enemy squads and their fighting positions, individual vehicles, AT weapons, and crew-served weapons. In the defense, the attacking enemy should be templated down to platoon level. His R&S activities, artillery targets, C2 assets, and obstacles should be templated. Also consider how he may employ smoke, chemical agents, CAS, and deception to support his operation.

f. **Weaknesses.** Identify the enemy weaknesses. Others may result from the war-game process. Determine how to exploit these weaknesses.

2-17. ANALYZE TROOPS AVAILABLE

The CO analyzes his troops available to ensure he knows the current status of his company. He also considers the friendly situation to determine how adjacent and supporting units may affect his mission. The purpose of this step is to identify all available resources and to identify any new limitations resulting from recent fighting. The CO considers his current location, disposition, supply status, and personnel strength. He is particularly concerned with losses to key leaders and weapons, ammunition status, and the morale of his men. The CO considers his current task organization and if any changes are planned. He considers the capability of any attached or supporting units and determines the impact of the company's priority in the battalion's fire priorities. Other considerations include:

- The location of the battalion trains and aid station.
- The locations for the battalion main CP and command group.

2-18. ANALYZE THE TIME

The commander continuously updates his initial estimate of time and the time schedule. He considers the times specified in the battalion order and any other key times that may have resulted from his analysis of the situation. The deductions made here will assist in synchronizing subordinate units. The CO evaluates time and space considerations (the consideration for how specific units will move in a given situation, the time required, the formations used, and so forth) throughout the estimate.

2-19. DEVELOP COURSES OF ACTION

A course of action is a possible plan that accomplishes the company's mission. It is as detailed as necessary to clearly describe how the unit will accomplish the mission and to allow effective war-gaming later in Step 3 of the estimate. It is generally a scheme of maneuver supported by a COA sketch. It describes the employment of the rifle platoons, the antiarmor and mortar sections, and possibly other significant resources, such as attached units, weapons, or engineer support.

a. Normally two or three courses of action are developed; however, the amount of planning time may limit the CO to only one. In this case the XO may assist by also developing a COA and wargaming the two with the CO. Each COA must be:

- Feasible—It accomplishes the mission and supports the commander's concept.
- Reasonable—The company remains an effective force after completing the mission.
- Distinguishable—It is not just a minor variation of another COA.

b. During the analysis of the situation, the commander integrates the facts, makes deductions, and analyzes further. Before developing the COAs, he determines the most critical facts and deductions for this mission. These provide greater focus to the COA development process. Examples of these might be:

- Potential decisive points determined from the integration of the terrain and enemy analysis.
- Limited planning time requiring an immediate decision and quick execution.
- A critical ammunition shortage for the machine guns.
- An identified mistake in positioning of enemy weapons, resulting in a major weakness in his defense.

- A complete lack of information on the enemy force.
- c. These critical factors, the restated mission statement and the other facts and deductions provide the focus for developing the COAs. Each COA should be developed starting at a potential decisive point. If one has not already been identified, consider the focus of the company's mission statement. If it focuses on—
- Gaining or retaining ground, then determine what terrain is most important. If key or decisive terrain has been identified, the decisive point is probably on this ground.
 - Enemy destruction, then determine what the enemy's weakness is. This may result from his organization, his doctrine, or his disposition on the ground. There may be a critical unit, weapon, or asset that is of great importance to the enemy. Its destruction will have a decisive effect on the enemy's ability to generate combat power. A deception task may cause the enemy to react in a way that exposes a weakness. If an obvious weakness is not identified, locate his strengths and plan to avoid these while making an enemy weakness through maneuver or the effect of the company's fires.
 - Security of a friendly force, then determine the most vulnerable part of the friendly force. Consider how the enemy may attack that unit. Look for the terrain that will provide an advantage to the enemy. Consider the approaches he will use to get to this terrain. From this analysis, the CO should be able to identify the area of greatest risk and a potential decisive point.
- d. Once the CO has identified his potential decisive point(s), he develops his COAs using the following process.
- (1) Determine decisive points and times to focus combat power.
 - (2) Determine the results that must be achieved at the decisive points to accomplish the mission.
 - (3) Determine the purposes to be achieved by the main and supporting efforts. (The supporting purposes must be clearly linked to the main effort's assigned purpose).
 - (4) Determine the essential tasks for subordinate units (main and supporting efforts) that achieve these purposes.
 - (5) Task—organize squads to accomplish each mission that has been determined. (The loss of cohesion when moving a squad to another platoon is critical. Normally, platoons do not cross—attach squads.)
 - (6) Assign C2 headquarters. (The platoon headquarters, section leaders, XO, 1SG, and other company leaders are used as required.)
 - (7) Complete a generic task organization by assigning all organic or attached units.
 - (8) Establish control measures that clarify and support the accomplishment of the platoon's assigned mission. (This may also include critical timings for key events.)
 - (9) Prepare a COA statement and sketch.
 - (10) Repeat this process for additional courses of action. (Other COAs may begin with a different potential decisive point, or they may concentrate combat power at the same one using different tasks, purposes, positions, and so forth.)
- e. Consider the following while developing courses of action.
- (1) Where can risk be taken to enable weighting the main effort? What is the likelihood of this action being overwhelmingly decisive?

(2) What assets are needed for immediate subordinates to achieve their specific tasks and purposes? Ensure the main effort is resourced first. If insufficient resources remain to ensure the supporting efforts' missions are attainable, change the tasks or modify the purpose. Do not take resources from the main effort to reduce risk in less important areas.

(3) Ensure mutual support is achieved. This may be done by the physical positioning of units and weapons in relation to each other, or it may be achieved by the clear linkage of purposes in subordinate's mission statements. Often, during decentralized operations, mutual support between the main and supporting efforts is solely dependent on a clear linkage of purposes in the unit's missions.

(4) What freedom of action do subordinates have? Use control measures (axis, DOA, assault positions, objectives, BPs, sectors, engagement areas...) to synchronize subordinate actions without stifling initiative.

f. The essential part of the COA, dealing with the actions at the decisive point (normally on the objective), has been completed. There may be additional details required to allow a thorough war game of each COA from start to finish. These may include:

- Movement prior to the maneuver at the decisive point or following the decisive action.
- Positioning other assets, such as the CP, mortars, or the company trains, and assigning them missions.
- Establishing additional fire control measures or signals.
- Significant soldiers' load decisions such as leaving the rucksacks, Dragons, or company mortars behind for an attack.

If these details are not needed to clarify the COA or to allow a complete war-game process, they should not be included at this time because they will complicate the war-game process.

g. A sketch of the COA will enhance clarity. The sketch should graphically capture the maneuver aspects of the COA. Proper graphic control measures (see FM 101-5-1) should be used, but additional graphics may also be used to clarify the COA. When using this sketch as a concept sketch (as part of an OPORD), these nonstandard graphics must be explained in a legend. The following scenarios and Figures 2-7 and 2-8 show examples of an offensive and a defensive COA statement and sketch. For additional information on concept sketch development, see Appendix G.

(1) *Offensive course of action.*

- COMPANY MISSION STATEMENT: A Co/2-66 IN(L) attacks at 190600 OCT 89, to seize high ground vicinity NB 459270 (OBJ DOG) to prevent the enemy from disrupting 3-66 IN's (BDE Main Effort) attack.
- COA STATEMENT: The company crosses the LD at 0600 along direction of attack Blue and occupies the ORP. After the leader's reconnaissance, one platoon (2 infantry squads, 2 Dragons, and the 60-mm mortars) occupy a support position vicinity hill 455 to suppress enemy positions to support the company's seizure of OBJ DOG. The antiarmor section (4 Dragons) follows the supporting PLT to checkpoint 1, then it establishes ambush positions vicinity road junction at NB459260 to isolate OBJ DOG. The remaining two platoons (3 squads each) occupy the assault position. The lead platoon seizes the western enemy squad position (OBJ TOOL) to allow the trail platoon to pass through and seize the decisive terrain. The trail platoon (company main

effort) remains in the assault position. On-order, it moves through the lead platoon, seizes the high ground vicinity NB459270 (OBJ BOX) to disrupt the enemy's command and control and to dominate the remaining squad positions. Then it destroys any enemy remaining in these positions to the south and east to prevent the enemy from disrupting 3-66 IN's attack. The 1SG with one infantry squad will follow and support the main effort by resupplying ammunition and evacuating casualties.

(2) *Defensive course of action.*

- MISSION STATEMENT: C Co/2-67 IN(L) is prepared NLT 281700 AUG 93 to destroy enemy forces from GL375651 to GL389650 to GL394660 to GL 373665 to prevent the envelopment of A Co (BN Main Effort).
- COA STATEMENT: The company defends with two PLTs forward in sector and 1 PLT in a depth BP. The PLT (2 squads) forward in the north destroys enemy forces to prevent enemy bypass of the main effort PLT. The PLT (3 squads, 2 Dragons) in sector to the south destroys enemy forces to prevent an organized company attack against the Co main effort. The main effort PLT (3 squads, 2 TOWs) retains Hill 657 (vic. GL 378659) to prevent the envelopment of Co A (BN Main Effort) from the south. The antiarmor section (1 squad, 4 Dragons) establishes ambush positions at the road junction (vic GL 377653) to destroy enemy vehicles to prevent a concentration of combat power against the main effort PLT. The Co mortars locate vic GL 377664. The antiarmor section initiates fires when the enemy combat reconnaissance patrol reaches the intersection.

2-20. ANALYZE THE COURSES OF ACTION

Step 3 of the estimate is the analysis of courses of action. This analysis is conducted by war-gaming the friendly courses of action against the enemy's most probable courses of action. This step of the estimate ensures the COA is viable and that the CO understands how the fight will take place. It clearly shows where the company is taking risks, when/where decisions may be required, and also the advantages and disadvantages of each course of action. Do not begin to compare the friendly COAs at this point in the estimate process. The comparison occurs during Step 4.

a. **Techniques.** Basic techniques for conducting the war game include the box, the belt, and the avenue of approach methods.

(1) *The box.* This method is used to focus the war-game process on a specific area of the battlefield. This may be the objective area, an engagement area, or some other critical area where the decisive action will take place. The leader uses the same action-reaction-counteraction method already discussed, but he limits himself to the actions within the box. The size of the box is determined by the situation, but it should include the units and actions that impact on the decisive action. When time is limited, this technique ensures that the war-game process considers the decisive action, but the disadvantage is that other critical actions/events may not be considered.

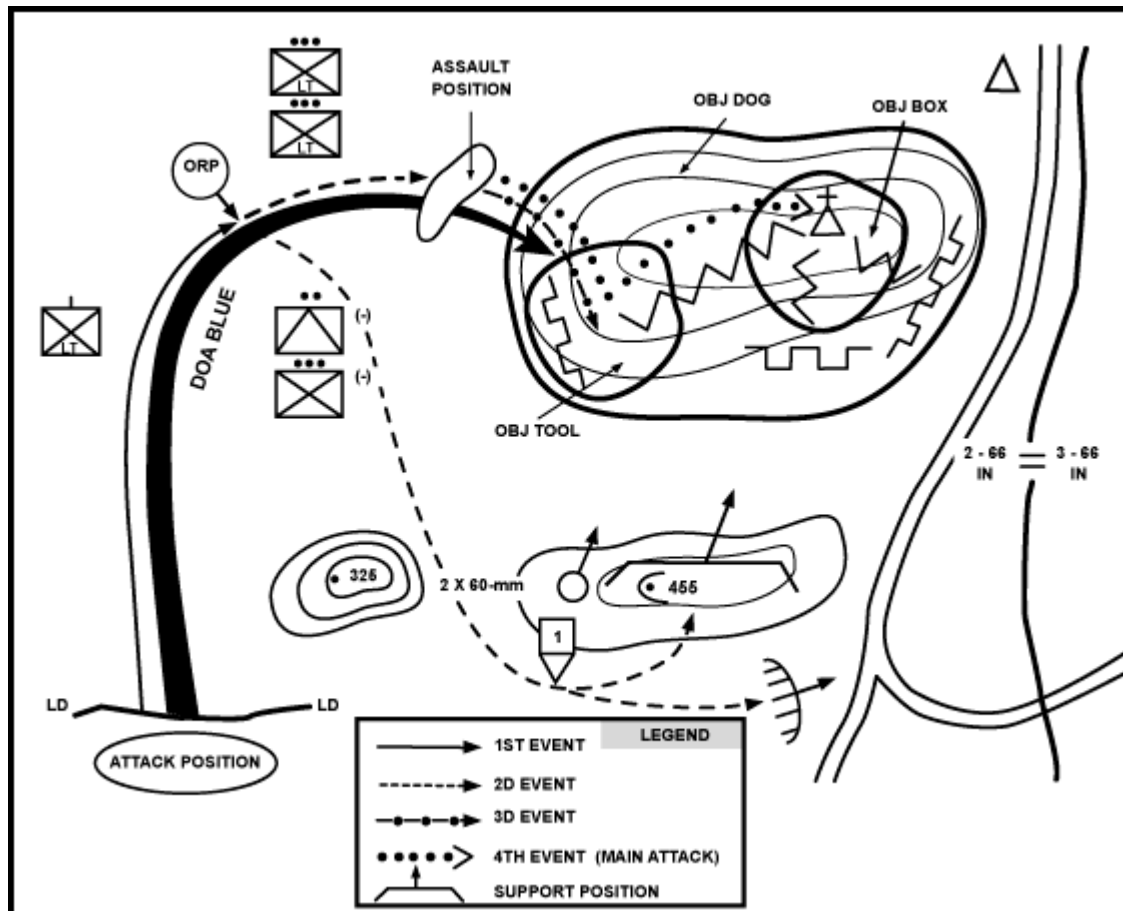


Figure 2-7. Offensive COA sketch.

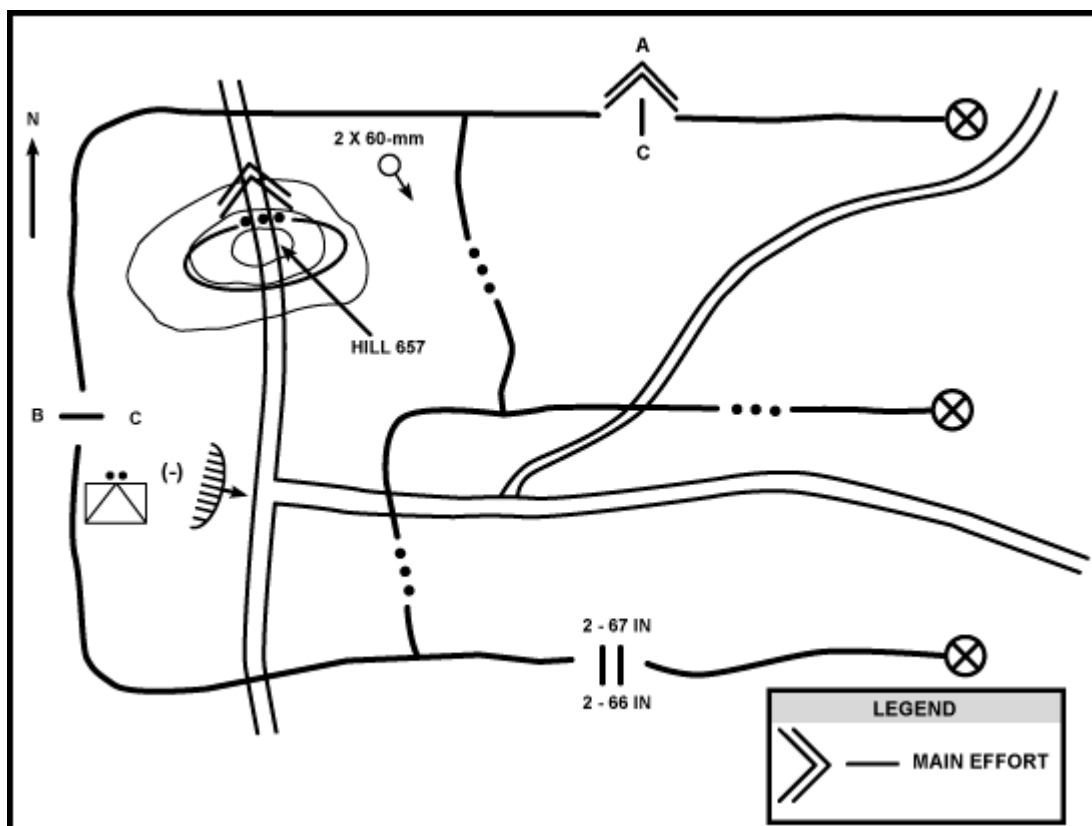


Figure 2-8. Defensive COA sketch.

(2) *The belt.* The leader using the belt technique, divides the COA into sections in depth and then war-games each of these belts in sequence. The offensive COA war-game example used the belt technique initially. The COA was divided into the following phases:

- Movement from the AA into the ATTACK POSITION.
- Movement from the LD to the ORP.
- Actions in the ORP.
- Deployment prior to the assault.
- The assault.
- Consolidation.

Each of these phases was war-gamed in sequence. In the example, once the war game reached the assault phase, the box technique was used to war-game the decisive action in detail. This technique may also be used to war-game a defensive COA.

(3) *The avenue of approach.* It is most often used to war-game a defensive COA when there are several avenues of approach that must be considered. The leader war-games the selected COA against the enemy's most probable COA by focusing the process on one avenue of approach at a time.

b. **War Game.** To war-game the friendly COAs against the enemy most probable COA, the CO mentally fights the battle as he expects it to occur. He divides the COAs into a series of actions or events, analyzes each to determine the likely result or reaction, and then considers the likely counteraction. This process of action, reaction, and

counteraction continues until the mission is accomplished or the COA fails. An example for war-gaming an offensive and defensive course of action is provided.

(1) *Offensive COA war game*. This is a war game of the COA presented in paragraph 2-19g(1).

(a) First action: The company moves from the AA into the attack position.

- Enemy reaction: None. Risk of detection is slight.

(b) Second action: The company crosses the LD and moves along DOA BLUE.

- Enemy reaction: Moderate risk of detection at danger area (HWY 27). If detected, the enemy may engage with indirect fires.
- Friendly counteraction: Suppress known enemy position (vic Hill 325) and suspected enemy position (vic NB423243). Break contact and continue movement on DOA BLUE to the ORP.

(c) Third action: Occupy the ORP.

- Enemy reaction: None.

(d) Fourth action: Conduct leader's reconnaissance.

- Enemy reaction: If detected, the enemy will increase the security on his perimeter and possibly increase his patrolling.
- Friendly counteraction: Options include complete the reconnaissance, immediately initiate the artillery preparation and execute the tentative plan, or move to the alternate ORP and issue a FRAGO.

(e) Fifth action: Support and security elements move into position. The company(-) occupies the assault position.

- Enemy reaction: If he detects the company, his options include engaging with direct and indirect fires, repositioning soldiers or vehicles within his perimeter, or withdrawing to an alternate position.
- Friendly counteraction: Initiate the assault once the support element is in position.

(f) Sixth action: Support element initiates fires; the lead platoon breaches the wire.

- Enemy reaction: Returns direct fire on the support element. Requests indirect fires (TOT- 2 minutes if we are on his planned targets, 5-7 minutes if we have avoided them.) Once detected, the breach site will be the enemy leader's main concern. The two positions with good observation will place effective small-arms fire on the breaching element. The enemy will attempt to reposition the eastern squad to the trench vicinity of the breach site.
- Friendly counteraction: The support element repositions as necessary to prevent enemy movement toward the breach site. The close-in support element (with the breaching platoon) suppresses the two enemy positions in vicinity of the breach. The lead PLT seizes a foothold and begins clearing the trench towards the enemy CP. If the breach is unsuccessful due to reinforcement by the enemy eastern squad, the breaching platoon will maintain pressure here while the trail platoon moves to the alternate breach site (vicinity of the enemy's vacated eastern squad position), to conduct a breach and clear toward the enemy CP. On-order, the lead platoon will disengage and follow through the alternate breach site.

(g) Seventh action: The lead PLT seizes its objective and begins to pass through the trail PLT (main effort).

- Enemy reaction: Options include repositioning soldiers, committing his reserve, withdrawing from this position, or counterattacking with another unit.
- Friendly counteraction: Continue the attack. Once the lead platoon has seized its objective, any enemy repositioning will have little effect. If the enemy has a reserve, it should be too small to have much effect. If he attempts to withdraw, the support element (with the FSO) will destroy him. A counterattack is unlikely and would be engaged by the isolation forces, providing at least 15 minutes early warning.

(h) Eighth action: Main effort platoon seizes the dominant terrain and destroys the enemy CP. Both platoons clear their objectives.

- Enemy reaction: Withdraw or wait for outside assistance. His remaining positions are dominated by the high ground (OBJ BOX) seized by the main effort.
- Friendly counteraction: None.

(2) *Defensive course of action war game.* This is a war game for the COA presented in paragraph 2-19g(2).

(a) First action: Enemy divisional or regimental reconnaissance assets arrive in the company sector.

- Friendly reaction: Security forces engage with direct and indirect fires.
- Enemy counteraction: If the reconnaissance unit was destroyed, the enemy may send other assets to replace them. If not destroyed, they will withdraw and attempt to bypass.

(b) Second action: Enemy CRP enters the company sector.

- Friendly reaction: Forward platoons report situation. Confirm enemy most probable COA. Antiarmor section prepares to initiate ambush at intersection.
- Enemy counteraction: None unless the CRP detects the forward platoons or prior reconnaissance has located the company's positions. If so, the enemy will use indirect fires while the CRP determines the company's dispositions.

(c) Third action: The antiarmor section initiates ambush on the CRP. Forward platoons engage enemy in sectors with direct and indirect fires.

- Enemy reaction: CRP seeks cover and reports. Lead companies deploy, return fire, and attempt to fight through forward platoons. Indirect fires called on any friendly concentrations located.
- Friendly counteraction: Avoid decisive engagements. Maintain dispersed formations.

(d) Fourth action: Main effort platoon engages enemy south of hill 657. Priority of fires shift to the main effort.

- Enemy reaction: He attempts to concentrate against the main effort by fixing with direct and indirect fires. Then he conducts a flank attack with dismounted infantry and repositions indirect assets (AGS 17s and BN mortars) to support this attack.
- Friendly counteraction: Forward platoons engage following forces to disrupt the attack against the main effort. Destroy/disrupt C2 and CS assets as they move into sector. Request CAS on enemy concentrating south of hill 657. (Preplanned CAS mission.)

(e) Fifth action: Enemy assault against the main effort platoon. The enemy second echelon battalion may begin moving through forward platoon sectors.

- Friendly reaction: Depends on the combat potential the enemy has positioned to support the assault. Possibly issue a FRAGO to the antiarmor section and the platoon(-) in the northern sector to reorient against the enemy attacking the main effort. Arrival of a second echelon battalion indicates the enemy main attack is in our sector. This is a change to the enemy most probable COA requiring a FRAGO by battalion.

(f) Sixth action: The main effort successfully retains hill 657.

- Enemy reaction: Remnants of the attacking unit occupy defensive positions vicinity hill 657 to reorganize and prepare to assault again or support another unit's assault. If the lead battalion is unsuccessful, it is unlikely that the second echelon battalion will be committed in this sector.
- Friendly counteraction: Issue a FRAGO to focus all available combat power to destroy this enemy force before he can reorganize.

OR

Action: The main effort is unsuccessful in retaining hill 657.

- Enemy reaction: If the enemy attack is successful, he will reorganize and continue the attack. Depending on his losses, he may pass through another company at this time.
- Friendly counteraction: The main effort platoon withdraws to a rally point in the restricted terrain, reorganizes, and interdicts enemy moving north. Forward platoons continue to destroy enemy in sector. The company reports the situation to battalion and continues to operate to disrupt enemy forces moving through sector.

(g) Seventh action: Exploit success of the main effort. (Even if the main effort did not retain hill 657, the enemy combat potential is degraded and his momentum disrupted.) Concentrate combat power against enemy weaknesses exposed throughout the company sector, such as isolated enemy positions, C2, and CS assets.

- Enemy reaction: He will attempt to reorganize to continue the attack.
- Friendly counteraction: Maintain pressure on the enemy throughout the depth of his unit. Use artillery, mortars, and CAS against his strengths.

c. **Information Learned.** Upon completing the war game of each COA, the leader should know its advantages and disadvantages. He also has identified any critical events that will determine the success or failure of each COA. These factors are used during Step 4 to compare the COAs. In addition, the commander now has a much greater appreciation for the conduct of this mission. The CO will use this information later as he expands the selected COA into the tentative plan for his company.

2-21. COMPARE THE COURSES OF ACTION

At Step 4 in the estimate process, the CO compares the COAs and selects the one that is most likely to accomplish the assigned mission. The CO considers the advantages and disadvantages for each COA. He also considers how the critical events impact on each COA. Then he selects significant factors based on this mission; the COAs are then compared using these factors. The CO may also compare the COAs using only the

advantages and disadvantages for each COA. This method is more subjective than using the significant factors that are common to all COAs.

a. **Advantages and Disadvantages.** These are the specific strengths and weaknesses that were noted during the war-game process. They may pertain to the mission, the terrain, the enemy, or any other aspect of the operation. They may apply to just one COA or to all of them.

(1) *Examples of advantages include:*

- Uses the most covered and concealed routes.
- Allows extra time for the leader's reconnaissance.
- Supports the reduction of the soldier's loads.
- Provides an excellent chance of surprise.
- Limits the risk on the secondary approach.

(2) *Examples of disadvantages include:*

- High risk of detection by the enemy's OP.
- Mortar ammunition requirements increase the soldier's loads.
- Time constraint requires daylight movement.
- Does not attack the enemy's weakest point.

b. **Critical Events.** In every operation, there are certain events or activities that will have a major impact on the success of the mission. These may have been identified during the mission analysis, the analysis of the situation, or the war-game process. Normally at company level, these critical events will apply to each COA. The significant factors for the comparison will often result from these critical events. Examples of possible critical events include:

- A forward passage of lines.
- Crossing a major stream en route to the objective.
- Breaching the protective obstacles.
- Gaining a foothold on the objective.
- Evacuating the casualties.
- Defeating the enemy's reconnaissance.
- Controlling the unit's fires into an engagement area.

c. **Significant Factors.** These are common factors that provide the focus for comparing each COA. They are selected for each tactical mission based on mission accomplishment. These factors are significant because they impact directly on the success of the mission. A long list reduces the importance of the most significant factors; therefore, the CO should limit the number of factors to a manageable number. Normally three to seven factors will provide a good comparison. There are two basic types of significant factors, mission-specific and general.

(1) *Mission-specific factors.* These are generated from the requirements for a specific mission. They are often determined by the critical events identified during the war-game process. They may also result from the advantages and disadvantages for each COA. Examples include:

- Casualty evacuation.
- Soldier's load.
- Effectiveness in accomplishing the mission.
- Time usage.

(2) *General factors.* These are for the employment of infantry in all operations. They include the Principles of War, the imperatives of AirLand Battle, the risk involved, the characteristics of the offense or defense, and other such doctrinal guidelines. Although these apply in every tactical operation, certain ones are more important to the mission at hand. The CO determines which these are and then lists them as significant factors for this mission. Examples include:

- Security.
- Simplicity.
- Surprise.
- Exploitation of enemy weaknesses.
- Risk.
- Disruption of the enemy attack.
- Concentration at the decisive point.
- Use of limited visibility.
- Employment of key weapons.

d. **Decision Matrix.** Once the CO has selected the significant factors, he must decide which COA supports each factor the best. The CO compares the COAs using each factor and then makes his decision.

(1) A more detailed technique involves a simple COA decision matrix. This may be required when there are too many factors for the CO to compare. It is important that the CO uses significant factors from his estimate of the situation to develop the matrix. Mission specific factors are used as much as possible. Figure 2-9 provides an example of a COA decision matrix.

(2) There are several ways to use this matrix. The simplest way is to give a + to the COA which best supports each factor. All other COAs would receive a -. Another way is to rank order each COA for each factor. The best COA for each factor receives a 1, next best a 2, and the COA that supports the factor the least would receive a 3. The COA with the lowest sum supports the significant factors best.

2-22. MAKE A DECISION

Step 5 of the estimate process involves making the decision. The CO selects the COA that he believes has the best chance of accomplishing the mission. The results of the comparison in Step 4 assist him in making this decision, but they do not make it for him. The CO may not select the COA that the decision matrix indicates is the best. There may be factors that were not included in the matrix but now have a significant impact on the mission. For example: As he analyzed the troops available in Step 2 and selected his significant factors during Step 4, he was unaware of the current status of his company's physical condition. Upon learning of the extent of his company's fatigue, the CO may decide this is the most significant factor to consider in making this decision. Even if the decision had already been made and orders issued before this new information was determined, the CO should immediately update his estimate and decide what impact this may have on his mission. It is this continuous estimate process that allows the CO to make rapid decisions during the fight.

COAs FACTORS	COA#1	COA#2	COA#3
SURPRISE		●	
FLEXIBILITY	●		
SPEED			●
COMBAT POWER AT THE DECISIVE POINT		●	
USE OF KEY TERRAIN	●		
SOLDIER'S LOAD		●	
TOTAL	2	3	1

Figure 2-9. Course of action decision matrix.

2-23. COMPLETE THE TENTATIVE PLAN

The focus of this process is to generate overwhelming combat power at the decisive point. To do this, the CO positions his units and weapons, assigns them tasks and purposes, allocates resources, designates control measures, and synchronizes activities. He refers back to the deductions from his estimate to complete his plan. To complete the tentative plan, the CO begins with the COA selected at Step 5 of the estimate. He expands this COA into a complete five-paragraph OPORD. The OPORD format is a guide for deciding what information is required to complete the plan.

a. **Task Organization.** The generic task organization from the COA is the basis for this; some changes may have resulted from the war-game process. The CO refers to the task organization in the battalion order and ensures all assets under his control are included in his plan. The CO takes the generic task organization from the COA and develops a specific task organization that assigns squads and weapons to each of his platoons. An example of a company task organization follows:

1st PLT(-)
1&2 Tms/AA SEC

2d PLT

3d PLT

AA SEC(-)

Co Control
60-mm SEC
1/1st PLT

b. **Enemy Situation.** The enemy situation in the BN OPORD (paragraph 1a) is the basis for this, but the CO refined this to provide the detail required by his subordinates. The CO considers the results of his enemy analysis to determine the information he includes in his paragraph 1a. This may include the enemy's composition, disposition, strength, recent activities, and capabilities. He also includes the enemy's most probable COA, which was used in the war-game process. A sketch or enemy overlay should be included.

c. **Friendly Situation.** This information is found in paragraphs 1b, 2, and 3 in the BN OPORD. The BN mission and concept are stated in paragraphs 2 and 3a respectively. The units adjacent to the company (left, right, front, and rear) are found on the operations overlay. Their mission statements are found in both paragraph 1b (adjacent BNs) and 3a (adjacent Cos). Units supporting the company will be found in the battalion task organization and in paragraphs 1b (external to the BN) and paragraph 3 (BN assets).

d. **Mission Statement.** The company mission statement was determined at Step 1 of the estimate. It is normally clearly stated in paragraph 3 of the BN OPORD.

e. **Concept of the Operation.** This paragraph describes how the CO intends to accomplish his mission. At company level, a maneuver and fires subparagraph will always be included. When needed to clarify the concept or to ensure synchronization, additional subparagraphs, such as engineering, EW, intelligence, and counterair operations may be included. The operations overlay/concept sketch is referenced here.

(1) *Maneuver.* The maneuver paragraph should be focused on the decisive action. It may, however, describe the maneuver throughout the operation. At company level, a maneuver paragraph that assigns the missions to each platoon/section and identifies the main effort normally requires no additional clarification. When additional information is required to clarify the concept, the CO may insert this information in the concept of the operation paragraph. Information such as movement formations and techniques, or the order of movement, should only be included if it clarifies the concept. Normally, the coordinating instructions paragraph is the appropriate location for this type of information.

(2) *Fires.* This paragraph describes how the CO intends for the fires to support his maneuver. The company FSO may prepare this paragraph based on the CO's guidance. This paragraph normally states the purpose to be achieved by the fires, the priority of fires for the company, and the allocation of any priority targets. A target list or overlay may be referenced here. Specific taskings for the company mortars should only be stated here if they clarify the concept of the operation.

(3) *Engineering.* Often, especially in defensive operations, this paragraph is required to clarify the CO's concept for preparing obstacles, mines and fortifications. When the company is supported by engineer equipment or units, the CO would state his guidance for employing these assets here. He may do this by stating the priority of effort

(survivability, countermobility, and mobility) and the priority of support for his subordinates (3d PLT, 1st PLT, AA section, 2d PLT, mortar section, and the CP).

f. **Tasks to Maneuver Units.** This paragraph lists the tasks/limitations for each of the platoons and sections. Each of these subordinate units will have a separate paragraph. The information included here comes from two sources—the tasks and limitations identified during the mission analysis and from the war game process.

(1) The tasks from the mission analysis may require only one subordinate unit to complete them. In this case, the CO decides which unit should do this task and assigns it. Examples of these tasks are listed.

- Provide one squad to carry ammunition for the battalion mortar platoon.
- Establish an OP at NB233876 NLT 231000.

Others may require two or more subordinate units or even the entire company to comply with them. In this case, the CO would list these tasks or limitations in the coordinating instructions.

(2) Most of these requirements result from the war game of the COA. They include—

- How to synchronize the operation.
- How to secure the company throughout the operation.
- How to concentrate the combat potential at decisive points.
- How to manage the soldier's load.
- How to degrade the enemy's combat potential.

To accomplish each of these requirements, the CO assigns specific taskings to each of his units. He also assigns specific limitations to certain subordinates. These may be listed here or noted on the company operations overlay/concept sketch.

g. **Tasks to Combat Support Units.** The 60-mm LWCM section and other CS units (engineers, ADA, and so forth) are addressed here.

h. **Coordinating Instructions.** These are requirements that apply to two or more subordinate units. These also may have been assigned by battalion or required based on the COA developed by the company CO. If they do not apply to all the subordinate units, then clearly state those units that must comply. Examples might be:

- MOPP4 in effect at 160730 MAR 94.
- The company time schedule.
- 2d and 3d PLT will each carry 30 mortar rounds.
- The consolidation plan.
- The BN rehearsal is at 211500 DEC 91.

i. **Service Support.** This paragraph provides the critical logistical information required to sustain the company during the operation. Most of this information is extracted from the battalion OPORD. There are also certain requirements generated from the company commander's concept. These may include:

- The location for the company trains.
- The casualty evacuation plan.
- Instructions for caching rucksacks, supplies, or other equipment.
- The resupply plan.

j. **Command and Signal.** This paragraph states where the C2 facilities and key personnel will be located during the operation. It includes the following information from the BN OPORD that subordinates require.

- (1) Locations for the BN main CP and the command group.
- (2) Critical communication requirements, such as radio listening silence in effect forward of the LD.
- (3) Signals for specific events or actions. The company concept will have similar requirements for the company commander to include. These may include:
 - The locations for the CO or CP, and the XO.
 - Adjustments to the unit SOP, such as a change to the succession of command or the standard PZ markings.
 - Emergency/visual signals for critical actions.
 - Signal information.

NOTE: The tentative plan should stand alone and have essential information so that it can be issued and executed if time does not permit physical reconnaissance to verify.

Section IV. CONTINUOUS OPERATIONS

Continuous operations are combat operations that continue around the clock at a high pace, requiring soldiers to fight without letup for extended periods. Opportunities for sleep are scattered throughout the day and night. (See FM 22-9.) Sustained operations are operations conducted 24 hours a day with little or no opportunity for sleep.

2-24. SUSTAINED OPERATIONS

Sustained operations are when the same soldiers or small units engage in combat operations with no opportunity for the unit to stand down and little time for soldiers to sleep. Infantry units must routinely plan to conduct sustained operations.

2-25. DEGRADATION OF COMBAT CAPABILITY

As sustained operations continue, all soldiers begin to show effects of general fatigue and lack of sleep. Unless counteracted, unit performance of combat tasks decline. Recent studies indicate performance is degraded by 25 percent for each 24-hour period without sleep. After 96 hours, performance can be expected to be near zero. Determination to endure must be supplemented by countering the adverse effects to slow the rate of decline. It becomes more difficult to perform assigned tasks to the required standard. Leaders need to recognize signs of serious sleep deprivation in their subordinates.

- a. Studies show that the performance in all duty positions does not degrade the same. Performance in a duty position where there is a heavy load of mental tasks (determining, calculating, thinking, decision-making) degrades faster than the performance in a position whose tasks are mainly physical (firing, running, lifting, digging).

b. In addition to the degradation caused by fear, fatigue, and loss of sleep, there is a significant loss of effectiveness caused by operation in MOPP4. When units are using full NBC protective equipment, judgment is degraded, communications are less effective, and information flow between units is reduced.

2-26. TECHNIQUES TO SUSTAIN OPERATIONS

To maintain effectiveness, adverse conditions of sustained operations must be overcome. The following are methods the commander can use to reduce degradation, develop the required abilities in soldiers, and prepare his unit to fight sustained operations.

a. **Build Individual Soldier Resources.** Preventive measures are often more effective for keeping groups healthy and active. They include improving or maintaining good physical condition, balanced nutrition, and immunizations.

b. **Provide Good Leadership.** Leadership is the keystone for sustained unit performance.

c. **Set High Standards.** Achieving success during sustained operations demands the highest standards of military professionalism.

d. **Develop Individual Confidence.** It is easier for units to withstand the adverse conditions of sustained operations if they maintain an optimistic, confident outlook. Confidence is the strongest bulwark against stress and performance degradation.

e. **Establish Reliable Communication Channels.** In combat, knowledge of the situation and the status of both enemy and friendly units sustains soldiers.

f. **Cross-train.** This helps ensure that someone is always available to perform a critical task or to help perform it. Criticality of tasks should determine the priority for cross-training.

g. **Develop Coping Skills.** Coping with stress is an important combat skill in sustained operations. (See FM 26-2.) Severe problems may develop after several days if leaders and soldiers do not sleep at least 4 hours every 24 hours. Ideally, the 4 hours should be continuous.

h. **Develop Good Physical Fitness.** Being physically fit strengthens the ability to recover from exhaustion.

i. **Build Stamina.** Fit soldiers withstand the stresses of sustained operations better.

j. **Foster a Spirit and Attitude of Winning.** In sustained operations, a genuine and single-minded dedication often gives the extra strength needed to win.

k. **Foster Cohesion, Esprit, Morale, and Commitment.** Cohesion holds units together; esprit keeps them dedicated to the mission. Unit cohesion and esprit are key sources of strength for enduring the stresses of sustained operations.

l. **Guarantee and Encourage the Free Exercise of Soldier's Faith.** Regardless of their religious background, most soldiers are reassured and calmed if the commander encourages and assists the battalion chaplain in his visits to the unit.

2-27. UNIT SLEEP PLAN

The commander must ensure his unit can conduct both sustained and continuous operations. The only way a unit can conduct CONOPs is that all soldiers and leaders get enough rest.

a. The CO must devise and enforce a work–rest–sleep plan for the company. It must include provisions for leaders as well as soldiers to sleep. Priority for sleep should go to those whose judgment and decision-making are critical to mission accomplishment.

b. The plan should allow soldiers at least 4 to 5 hours of sleep each 24 hours; this will sustain performance for several days. Six to 8 hours of sleep can sustain performance indefinitely.

APPENDIX G

ORDERS FORMATS AND SUPPLEMENTS

The Army's authority for staff procedures and formatting orders is FM 101-5 and the formats contained herein are consistent with it. Although these formats are written, company commanders will normally receive their orders orally from the battalion and will give them orally to their companies. They will use operations overlays, terrain models, and execution matrixes to supplement the order.

G-1. WARNING ORDER

Warning orders give subordinates advance notice of operations that are to come. This gives them time to prepare. The order should be brief, but complete. A sample format follows:

1. SITUATION.

Brief description of the enemy and friendly situations. Attachments and detachments to the company.

2. MISSION.

Use the restated mission from the mission analysis.

3. GENERAL INSTRUCTIONS.

a. Special teams or task organization within the company.

b. Uniform and equipment common to all (changes from SOP; for example, drop rucks, drop or pick up helmets).

c. Special weapons, ammunition, or equipment (different from SOP). (For example, mines, satchel charges, grappling hooks, drop or pick up night vision devices.)

d. The tentative time schedule is formed on the basis of mission analysis.

It includes at least:

(1) Earliest time of move.

(2) Time and place of OPORD.

(3) Probable execution time.

(4) Inspection times and items to be inspected different from SOP.

(5) Rehearsal times and actions to be rehearsed. (For example, actions at the objective, special teams for bridges, searches, EPWs, or other actions as time allows.)

e. Additional general instruction as needed or by SOP.

4. SPECIAL INSTRUCTIONS.

a. To subordinate leaders:

- Executive officer.
- First sergeant.
- Company FSO.
- Platoon leaders.
- Mortar section sergeant.
- Antiarmor section sergeant.
- RATELO.

- Medic.
- Attachments.
- b. To persons helping prepare OPORD (SOP).
- c. As needed or by SOP.
- d. Acknowledgement. All subordinates verify receipt of the warning order to ensure the required personnel are notified.

G-2. OPERATIONS ORDER

An OPORD gives the subordinate leaders the essential information needed to carry out an operation. OPORDs use a five-paragraph format (shown below) to organize thoughts and ensure completeness. They also help subordinate leaders understand and follow the order. Use a terrain model or sketch along with a map to explain the order. The order should be given while observing the objective area.

TASK ORGANIZATION:

1st PLT(-)	2nd PLT(+)	3rd PLT
2 Antiarmor Tms	1/1st PLT	
Antiarmor SEC(-)	CO Control	
	60-mm SEC	

1. SITUATION. (The company task organization for the mission is stated at the start of the OPORD so that the subordinates know what assets they will have during the operation.)

a. Enemy Situation.

(1) Composition, disposition, and strength.

(2) Recent activities.

(3) Capabilities.

(4) The enemy's most probable COA. A sketch or enemy overlay is normally included to clarify this description.

b. Friendly Situation.

(1) Mission and concept for the battalion.

(2) Mission for the unit on the left.

(3) Mission for the unit on the right.

(4) Mission for the unit to the front.

(5) Mission for the unit to the rear or following.

(6) Mission for the battalion reserve.

(7) Mission for any units supporting battalion if they impact on the company mission.

c. Attachments and Detachments. Changes to the task organization during the operation. For example, if the task organization changes during the consolidation phase of an attack, it would be indicated here.

2. MISSION.

The mission essential task(s) and purpose(s). It normally includes Who, What, When, Where, and Why. The where is described in terms of terrain

Student Handout 3

This student handout contains 2 pages extracted from FM 5-71-2, App C

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX C

PRECOMBAT INSPECTION CHECKLIST

A company that has a well-established system of checks and inspections will consistently perform to standard. The engineer leader must establish checks and inspections that support the unit's mission-essential task list (METL). Once established, the engineer leader must ensure that the checks and inspections are performed before and after combat operations. Checks and inspections fall into the following categories: precombat checks, precombat inspections, postcombat checks, and postcombat inspections.

PRECOMBAT CHECKS

Precombat checks aid the leader in preparing his unit for combat. These include checks for individuals, vehicles, weapons, and equipment. While these checklists are generic, they can be easily tailored to fit a

unit's specific needs. Leaders at all levels use these checklists in their planning and in preparing instructions to their subordinate leaders.

PRECOMBAT INSPECTIONS

Precombat inspections validate that the precombat checks have been performed. The leader must plan his time and that of his unit's to ensure that inspections are performed. Time must also be available for corrective actions should an individual or item fail the inspection. The leader cannot

delegate this responsibility; he must be the inspector. This demands that he be competent in the maintenance and care of all of his unit's equipment. The standards he sets will determine the unit's ability to perform in combat.

POSTCOMBAT CHECKS

Postcombat checks are identical in form to precombat checks but differ in substance. Checks are still performed on individuals, vehicles, weapons, and equipment; however, the focus changes to repairing and refitting these items to a reusable condition. Expendable items may need replenishing and lost items require replacing. Units re-

place their basic-load items and ensure that equipment has its full complement of POL. Damaged and nonoperational equipment is evacuated for repair. Individual needs must also be attended to—soldiers require rest and refitting and medical problems must be attended to—as well as morale problems.

POSTCOMBAT INSPECTIONS

In the same way that precombat inspections are performed, postcombat inspections must be planned and conducted by the leaders. Since postcombat operations are heavily maintenance-oriented, the leader should seek the aid of his vehicle,

communications, and supply personnel to assist him in conducting his inspections. They are capable of making immediate repairs and also serve as expert advisers. Inspections must focus on serviceability. Vehicles and equipment must be operated to

standard. A check of all radios requires that a net station be positioned at a distance consistent with combat conditions. It does a unit no good to be able to talk only in an assembly area. Sufficient time must be allocated to perform these inspections as it is necessary to pay strict attention to detail. An inspection which checks only one of every three weapons ensures that

the unit is only one-third operable. A 100 percent inspection must be made of everything.

Table C-1 provides an example of a pre-combat inspection. The commander can rotate the inspectors' responsibilities to train his officers and provide as thorough an inspection as possible.

Table C-1. Sample precombat inspection

Vehicle preparations	<ul style="list-style-type: none">• Loaded according to the load plan• Vehicle refueled• Water cans full, Class I stowed• Equipment cleaned and stowed• First-aid kit/combat-lifesaver bag complete and stowed• Vehicle dispatched, TM present, vehicle tool kit stowed• Basic load of ammunition stowed
Communications equipment	<ul style="list-style-type: none">• Radios operational, mounted and secured, connections and receptacles cleaned and frequencies set• Antenna matching unit(s) operational• COMSEC equipment operational• Telephones operational and stowed• OE-254 complete, operational, and stowed• All required nets entered and monitored
NBC	<ul style="list-style-type: none">• M11 decon apparatus mounted and operational• Hasty decon kit with DS-2 and nitrogen bottles stowed• Automatic chemical alarm operational and mounted• M256 kits stowed
Optics	<ul style="list-style-type: none">• Night-vision devices and binoculars cleaned, operational, and stowed
Maintenance	<ul style="list-style-type: none">• Preventive maintenance checks and services conducted on all equipment• DA Form 2404(s) completed on all equipment
Armaments	<ul style="list-style-type: none">• All weapons cleaned and test-fired

C-2 Precombat Inspection Checklist

Student Handout 4

This student handout contains Lesson Notes.

LESSON NOTES	
TOPICS	NOTES
<ul style="list-style-type: none"> (d) Key Terrain (e) Avenues of Approach (5) Enemy Analysis <ul style="list-style-type: none"> (a) Composition (b) Disposition (c) Recent Activity (d) Reinforcement Capability (e) Possible Courses of Action (f) Weaknesses (6) Troops Analysis <ul style="list-style-type: none"> (a) Current Status of squad (b) Adjacent Units (c) Supporting Units (7) Time Analysis <ul style="list-style-type: none"> (a) Time Schedule (b) Key Times (c) Movement Times c. Develop Courses of Action <ul style="list-style-type: none"> (1) Content (2) Characteristics 	

LESSON NOTES	
TOPICS	NOTES
<ul style="list-style-type: none"> (3) Steps <ul style="list-style-type: none"> (a) Identify Decisive Point (b) Determine Necessary Results (c) Main/supporting Goals (d) Squad Essential Tasks (e) Squad Organization (f) Cmd/Ctl Responsibilities (g) Control Measures (h) Statement and Sketch (i) Other Considerations (j) Details d. Analyze Course of Action <ul style="list-style-type: none"> (1) War-gaming Techniques (2) Steps <ul style="list-style-type: none"> (a) Action (b) Reactions (c) Counteraction 	

LESSON NOTES	
TOPICS	NOTES
(3) Essential Information e. Compare Courses of Action f. Make a Decision g. Complete the Tentative Plan (1) Task Organization (2) Enemy (3) Friendly (4) Mission (5) Concept of Operation (6) Tasks to Maneuver Units (7) Tasks to Combat Support Elements (8) Coordinating Instruction (9) Service Support (10) Command and Signal 4. Initiate Movement	

LESSON NOTES	
TOPICS	NOTES
5. Conduct Reconnaissance <ul style="list-style-type: none"> a. Prepare Plan b. Issue Plan c. Select Technique d. Conduct Reconnaissance 	
6. Complete the Plan	
7. Issue the Order <ul style="list-style-type: none"> a. Location b. Visual Aids c. Time 	
8. Supervise <ul style="list-style-type: none"> a. Inspect b. Rehearse c. Briefback d. Coordinate 	

PRACTICAL EXERCISE SHEET PE-1

Title	ESTIMATE OF THE SITUATION			
Lesson Number/Title	W323 version 1 / TROOP-LEADING PROCEDURES			
Introduction	PE-1 focuses student attention on the "estimate of the situation" process. This exercise uses a "garrison-type" mission to remind you that you can apply troop-leading/estimate process to all situations, not just tactical.			
Motivator	This practical exercise will give you a better understanding of the estimate of the situation process and will demonstrate that the troop-leading process applies to all operational situations, not just tactical operations.			
Learning Step/Activity	<p>NOTE: The instructor should inform the students of the following Learning Step/Activity requirements. (ELO I.1)</p> <p>At the completion of this lesson, you [the student] will:</p> <table border="1"> <tr> <td>Action:</td> <td>Practical Exercise</td> </tr> </table>		Action:	Practical Exercise
Action:	Practical Exercise			
Safety Requirements	None			
Risk Assessment Level	Low			
Environmental Considerations	None			
Evaluation	Students will evaluate their group's solution using the guidelines in the Solution to Practical Exercise 1 that the instructor will distribute.			
Instructional Lead-In	None			
Resource Requirements	<p>Instructor Materials: None</p> <p>Student Materials:</p>			
Special Instructions	Your group has 40 minutes to complete this PE. After 40 minutes, your group will present its solution to the class.			

Procedures

1. SITUATION: You are the squad leader of 1st squad, 1st Platoon, Co C, 47th PEB. Your squad consists of two teams. Each team has a SGT team leader and five soldiers. Near the end of a training exercise, your squad receives the mission to clear small-arms ranges 8 and 9. The time now is 1730.

a. The order from the platoon leader contains the following additional information:

(1) The company trucks will transport your squad to range 8, range 9, or both. The company trucks will leave the unit at 0700. Travel time to the ranges is about 30 minutes. You must release the trucks as soon as you off load your personnel and cleaning supplies.

(2) A range control representative will arrive at each range at 0800 to unlock the tower and target shed.

(3) The range control representative for each range will return at 1500 to inspect the range and lock the buildings.

(4) Breakfast will be 0530-0700. Dinner is 1630-1800. MREs are available for lunch.

(5) Company trucks will arrive at range 8 at 1400 to remove trash brass, and live ammunition. You must load and release these trucks within 30 minutes.

(6) The company trucks will return to the ranges at 1600 to transport your squad personnel back to the company area.

(7) You may use your commander's vehicle to visit both ranges at 1900 this evening. You cannot use his vehicle tomorrow.

b. Your initial METT-T analysis identified these facts:

(1) The range control SOP states that you must perform the following actions to clear a small-arms range:

(a) Sweep and mop the tower

(b) Police the range area for trash.

(c) Police the firing line for brass and ammunition.

(d) Remove all targets from the downrange area. Store usable targets in the target shed and dispose of unusable targets.

(e) Remove all trash, brass, and ammunition from the range.

(2) It is a 30-minute walk from range 8 to range 9.

c. During your initial METT-T analysis, you make the following assumptions:

(1) One team can:

(a) Sweep and mop the tower in 30-minutes.

- (b) Police one range area for trash in one hour.
- (c) Police the firing line on one range in one hours.
- (d) Remove the targets from one range in three hours.

(2) You cannot effectively utilize additional personnel on this task because of limited working room.

2. REQUIREMENTS.

- a. Develop the initial time schedule for the operation.
- b. Develop at lease two courses of action.
- c. Determine at least three significant points for comparison of the two courses of action.
- d. Compare the courses of action using a decision matrix.
- e. Select the best course of action.

	COA 1	COA 2
Total		

**Feedback
Requirements**

None

Handouts for Lesson 1: W325 version 2

This appendix contains the items listed in this table—

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1 and SH-1-2
SH-2, Extracted material from FM 3-06.11	SH-2-1
SH-3, Extracted material from FM 6-22.5	SH-3-1
SH-4, Extracted material from FM 7-7	SH-4-1
SH-5, Extracted material from FM 7-8	SH-5-1
SH-6, Extracted material from FM 7-10	SH-6-1
SH-7, Extracted material from FM 55-30	SH-7-1

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 1

Advance Sheet

Lesson Hours	This lesson consists of 8.4 hours of small group instruction and four practical exercises totaling 1.6 hours.						
Overview	To win on the battlefield you must know your duties and responsibilities as a leader. This knowledge will enable you to ensure that your soldiers complete all tasks accurately and in a timely manner.						
Learning Objective	<p>Terminal Learning Objective</p> <table border="1"> <tr> <td>Action:</td><td>Develop a base of knowledge of squad tactical operations.</td></tr> <tr> <td>Conditions:</td><td>As a small unit leader in a company or battalion-level unit, in a classroom environment, given FMs 3-06.11, 6-22.5, 7-7, 7-8, 7-10 and 55-30.</td></tr> <tr> <td>Standards:</td><td>Developed a base of knowledge of squad tactical operations</td></tr> </table> <p> ELO A Identify convoy control measures. ELO B Identify convoy organizational considerations. ELO C Identify convoy planning considerations. ELO D Identify convoy defense measures. ELO E Identifying assembly area activities. ELO F Identify the priority of work for an assembly area. ELO G Identify sleep/rest planning considerations. ELO H Identify movement techniques. ELO I Identify movement to contact techniques. ELO J Identify deliberate attack procedures. ELO K Identify limited-visibility attack procedures. ELO L Identify individual and fire team movement techniques in urban areas. ELO M Identify building entry techniques. ELO N Identify room clearing techniques. ELO O Identify techniques for seizing and maintaining initiative in the defense. ELO P Identify techniques for organizing a defense. ELO Q Identify control measures for a defense. ELO R Identify planning considerations for obstacles in a defense. ELO S Identify security measures for a defense. ELO T Identify procedures for conducting a defense. ELO U Identify procedures for consolidating and reorganizing. ELO V Identify the planning considerations for a defense in urban terrain. </p>	Action:	Develop a base of knowledge of squad tactical operations.	Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment, given FMs 3-06.11, 6-22.5, 7-7, 7-8, 7-10 and 55-30.	Standards:	Developed a base of knowledge of squad tactical operations
Action:	Develop a base of knowledge of squad tactical operations.						
Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment, given FMs 3-06.11, 6-22.5, 7-7, 7-8, 7-10 and 55-30.						
Standards:	Developed a base of knowledge of squad tactical operations						

Assignment

The student assignments for this lesson are:

- Study FM 3-06.11, pp 3-1 thru 3-27, para 3-1 thru 3-21; and pp 5-43 thru 5-48, para 5-29 thru 5-30.
- Study FM 6-22.5, pp 57 thru 75, para 4001 thru 4004.

- Study FM 7-7, pp Q-1 thru Q-8, para Q-1 thru Q-3.
 - Study FM 7-8, pp 1-10 thru 1-20, para 1-8 thru 1-9; p 2-38 thru 2-60, para 2-10 thru 2-15; and pp 2-84 and 2-85, para 2-25.
 - Study FM 7-10, pp 5-35 thru 5-46, para 5-20 thru 5-23.
 - Study FM 55-30, pp 5-1 thru 5-14, para 5-1 thru 5-5; and pp 6-1 thru 6-11, para 6-1 thru 6-5.
-

**Additional
Subject Area
Resources**

- STP 21-24-SMCT
-

Bring to Class

- Student Handouts 1-7.
 - Pen or pencil.
 - Writing paper.
-

Student Handout 2

Extracted Material from FM 3-06.11

This student handout contains 34 pages of extracted material from the following publication:

FM 3-06.11, Combined Arms Operations in Urban Terrain, 28 Feb 2002

Chapter 3	Pages 3-1 thru 3-27
Chapter 5	Pages 5-43 thru 5-49

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 3

URBAN COMBAT SKILLS

Successful combat operations in urban areas depend on the proper employment of the rifle squad. Each member must be skilled in moving, entering buildings, clearing rooms, employing hand grenades, selecting and using fighting positions, navigating in urban areas, and camouflage.

Section I. MOVEMENT

Movement in urban areas is the first fundamental skill the soldier must master. Movement techniques must be practiced until they become habitual. To reduce exposure to enemy fire, the soldier avoids open areas, avoids silhouetting himself, and selects his next covered position before movement.

3-1. CROSSING OPEN AREAS

Open areas, such as streets, alleys, and parks, should be avoided. They are natural kill zones for enemy crew-served weapons or snipers. They can be crossed safely if the individual or small-unit leader applies certain fundamentals including using smoke from hand grenades or smoke pots to conceal movement. When employing smoke as an obscurant, keep in mind that thermal sighting systems can see through smoke. Also, when smoke has been thrown in an open area, the enemy may choose to engage with suppressive fires into the smoke cloud.

a. Before moving to another position, the soldier makes a visual reconnaissance, selects the position offering the best cover and concealment, and determines the route he takes to get to that position.

b. The soldier develops a plan for his own movement. He runs the shortest distance between buildings and moves along the far building to the next position, reducing the time he is exposed to enemy fire.

3-2. MOVEMENT PARALLEL TO BUILDINGS

Soldiers and small units may not always be able to use the inside of buildings as routes of advance and must move on the outside of the buildings (Figure 3-1, page 3-2). Smoke, suppressive fires, and cover and concealment should be used to hide movement. The soldier moves parallel to the side of the building (maintaining at least 12 inches of separation between himself and the wall to avoid *rabbit rounds*, ricochets and rubbing or bumping the wall), stays in the shadow, presents a low silhouette, and moves rapidly to his next position (Figure 3-2, page 3-2). If an enemy gunner inside the building fires on a soldier, he exposes himself to fire from other squad members providing overwatch. An enemy gunner farther down the street would have difficulty detecting and engaging the soldier.

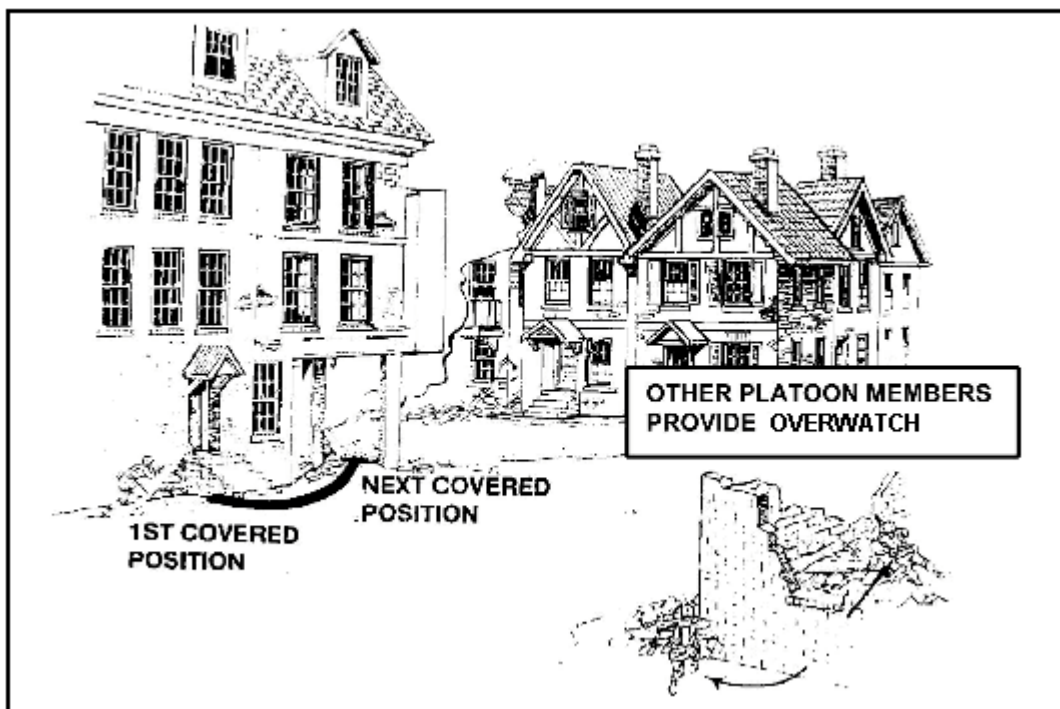


Figure 3-1. Selection of the next position.

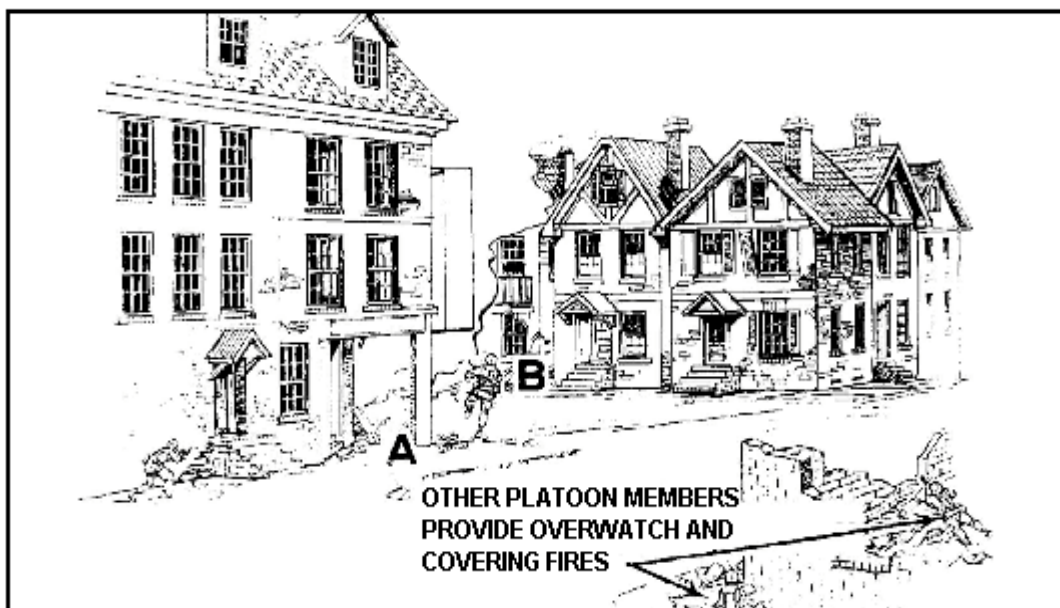


Figure 3-2. Soldier moving outside building.

3-3. MOVEMENT PAST WINDOWS

Windows present another hazard to the soldier. The most common mistakes are exposing the head in a first-floor window and not being aware of basement windows.

a. When using the correct technique for passing a first-floor window, the soldier stays below the window level and near the side of the building (Figure 3-3). He makes sure he does not silhouette himself in the window. An enemy gunner inside the building would have to expose himself to covering fires if he tried to engage the soldier.



Figure 3-3. Soldier moving past windows.

b. The same techniques used in passing first-floor windows are used when passing basement windows. A soldier should not walk or run past a basement window, since he presents a good target to an enemy gunner inside the building. The soldier should stay close to the wall of the building and step or jump past the window without exposing his legs (Figure 3-4).

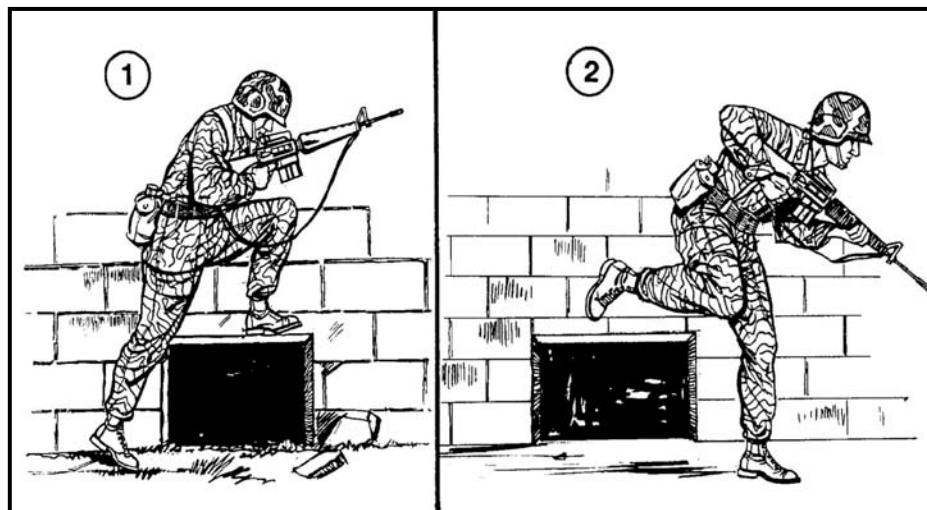


Figure 3-4. Soldier passing basement windows.

3-4. MOVEMENT AROUND CORNERS

The area around a corner must be observed before the soldier moves. The most common mistake a soldier makes at a corner is allowing his weapon to extend beyond the corner exposing his position (this mistake is known as *flagging* your weapon). He should show his head below the height an enemy soldier would expect to see it. The soldier lies flat on the ground and does not extend his weapon beyond the corner of the building. He wears his Kevlar helmet and only exposes his head (at ground level) enough to permit observation (Figure 3-5). Another corner clearing technique that is used when speed is required is the *pie-ing* method. This procedure is done by aiming the weapon beyond the corner into the direction of travel (without flagging) and side-stepping around the corner in a circular fashion with the muzzle as the pivot point (Figure 3-6).

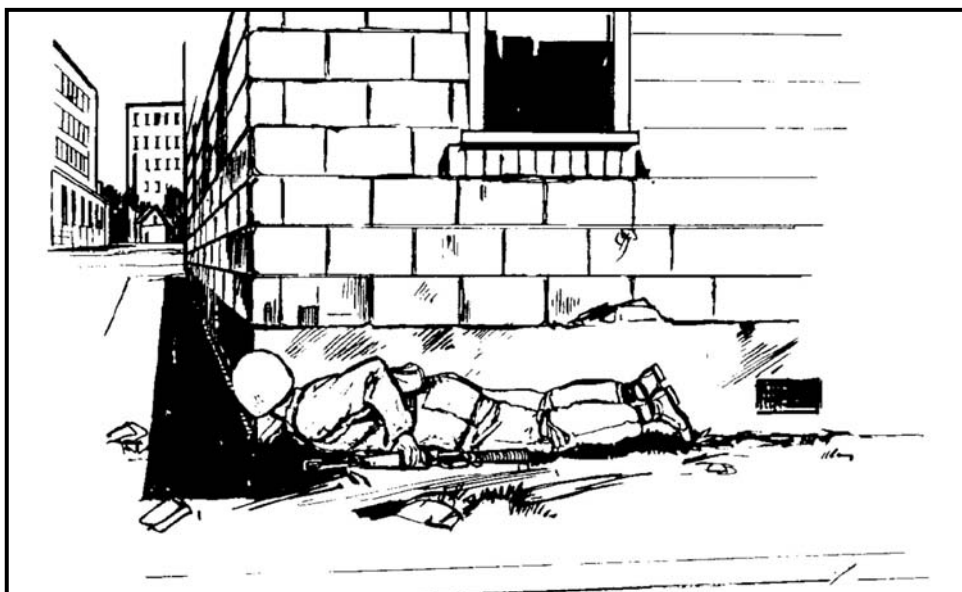


Figure 3-5. Correct technique for looking around a corner.

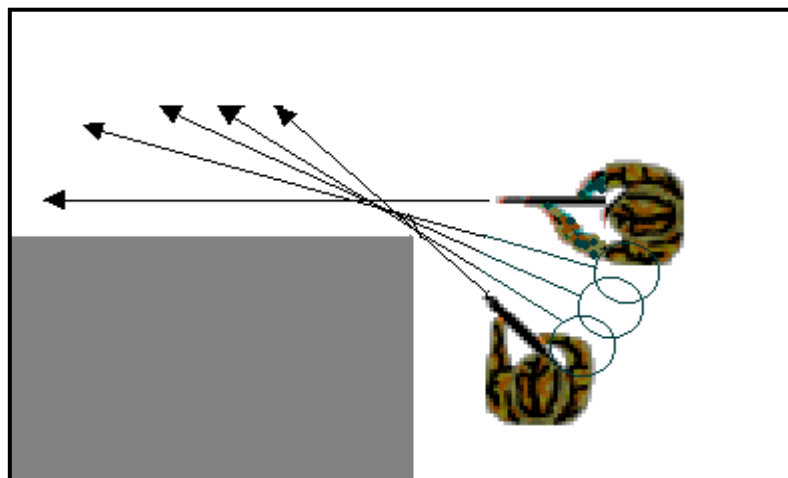


Figure 3-6. *Pie-ing* a corner.

3-5. CROSSING A WALL

Each soldier must learn the correct method of crossing a wall (Figure 3-7). After he has reconnoitered the other side, he rolls over the wall quickly, keeping a low silhouette. Speed of his move and a low silhouette deny the enemy a good target.



Figure 3-7. Soldier crossing a wall.

3-6. USE OF DOORWAYS

Doorways should not be used as entrances or exits since they are normally covered by enemy fire. If a soldier must use a doorway as an exit, he should move quickly to his next position, staying as low as possible to avoid silhouetting himself (Figure 3-8). Preselection of positions, speed, a low silhouette, and the use of covering fires must be emphasized in exiting doorways.

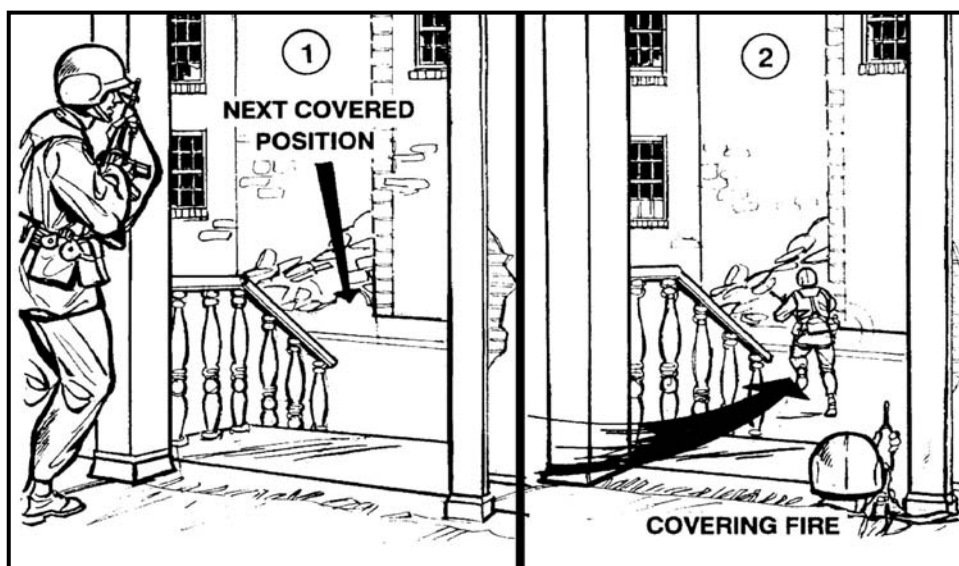


Figure 3-8. Soldier exiting a doorway.

3-7. MOVEMENT BETWEEN POSITIONS

When moving from position to position, each soldier must be careful not to mask his supporting fires. When he reaches his next position, he must be prepared to cover the movement of other members of his fire team or squad. He must use his new position effectively and fire his weapon from either shoulder depending on the position.

a. The most common errors a soldier makes when firing from a position are firing over the top of his cover and silhouetting himself against the building to his rear. Both provide the enemy an easy target. The correct technique for firing from a covered position is to fire around the side of the cover, which reduces exposure to the enemy (Figure 3-9).

b. Another common error is for a right-handed shooter to fire from the right shoulder around the left corner of a building. Firing left-handed around the left corner of a building takes advantage of the cover afforded by the building (Figure 3-10). Right-handed and left-handed soldiers should be trained to adapt cover and concealment to fit their manual orientation. Soldiers should be able to fire from the opposite shoulder.

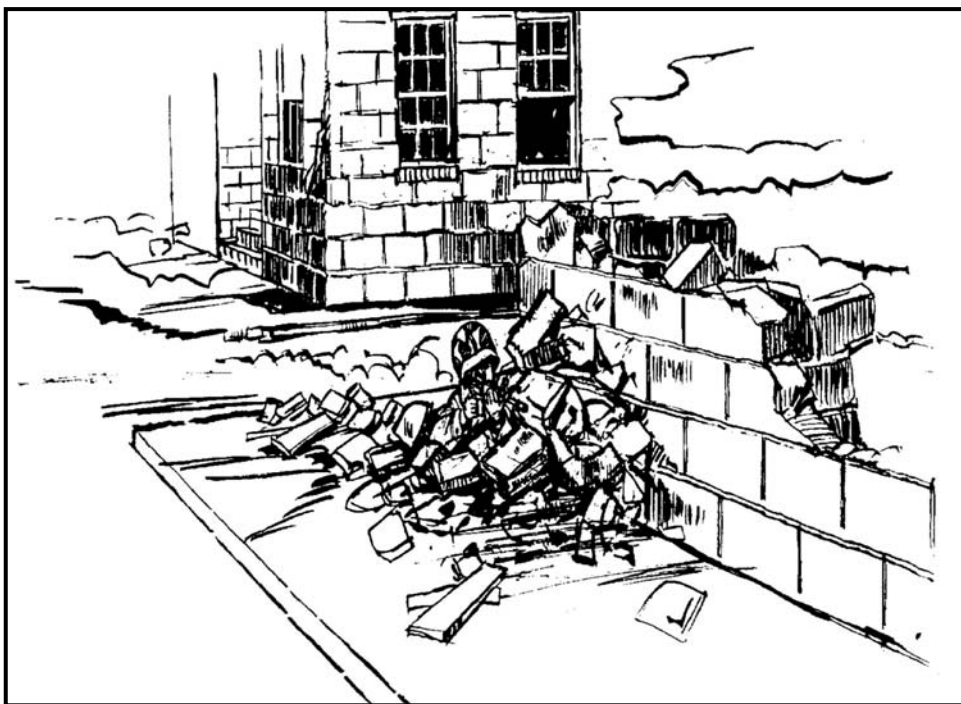


Figure 3-9. Soldier firing from a covered position.



Figure 3-10. Firing left-handed around the corner of a building.

3-8. FIRE TEAM EMPLOYMENT

Moving as a fire team from building to building or between buildings presents a large target for enemy fire (Figure 3-11). When moving from the corner of one building to another, the fire team should move across the open area in a group. Moving from the side of one building to the side of another presents a similar problem and the technique of movement employed is the same. The fire team uses the building as cover. In moving to an adjacent building (Figure 3-12, page 3-8) team members should keep a distance of 3 to 5 meters between themselves and, using a planned signal, make an abrupt flanking movement (on line) across the open area to the next building.



Figure 3-11. Fire team movement.

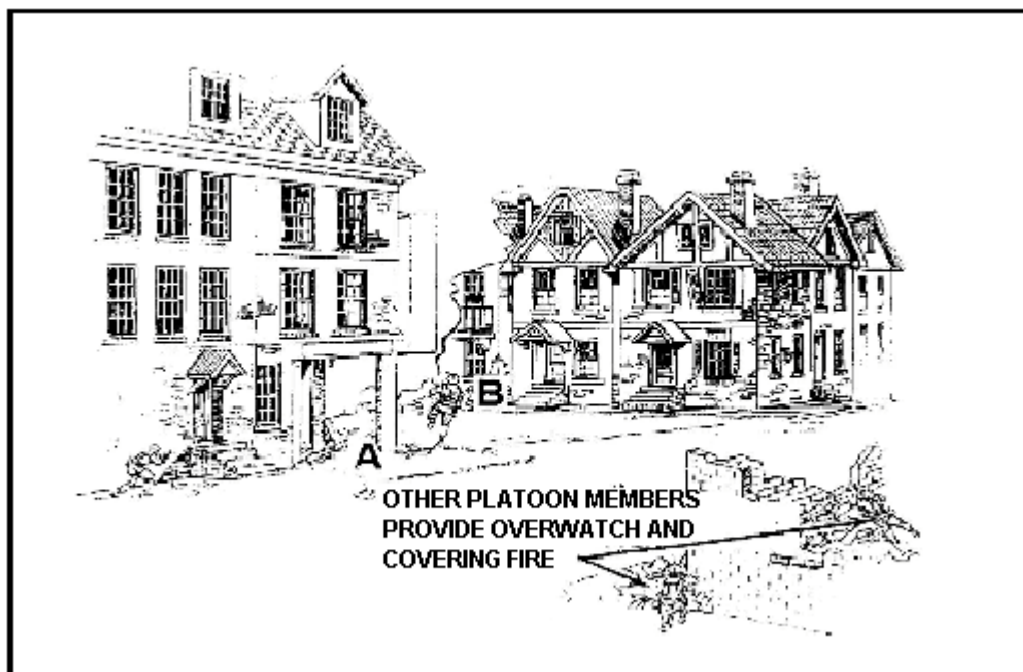


Figure 3-12. Movement to adjacent building.

Section II. ENTRY TECHNIQUES

When entering buildings a soldier must minimize the time he is exposed. Before moving toward the building he must select the entry point. When moving to the entry point the soldier should use smoke to conceal his advance. He must avoid using windows and doors except as a last resort. He should consider the use of demolitions, tank rounds, and other means to make new entrances. If the situation permits he should precede his entry with a grenade, enter immediately after the grenade explodes, and be covered by one of his buddies.

3-9. UPPER BUILDING LEVELS

Although entering a building from any level other than the ground floor is difficult, clearing a building from the top down is the preferred method. Assaulting or defending a building is easier from an upper story. Gravity and the building's floor plan become assets when throwing hand grenades and moving from floor to floor.

a. An enemy who is forced to the top of a building may be cornered and fight desperately or escape over the roof. An enemy who is forced down to ground level may withdraw from the building, thus exposing himself to friendly fires from the outside.

b. Various means, such as ladders, drainpipes, vines, helicopters, or the roofs and windows of adjoining buildings, may be used to reach the top floor or roof of a building. One soldier can climb onto the shoulders of another and reach high enough to pull himself up.

c. Ladders offer the quickest method to access the upper levels of a building (Figure 3-13). Units deploying into an urban environment should be equipped with a

lightweight, man-portable, collapsible ladder as referenced in the platoon urban operations kit.



Figure 3-13. Entering using portable ladder

(1) If portable ladders are not available, material to build ladders can be obtained through supply channels. Ladders can also be built with resources available throughout the urban area; for example, lumber can be taken from inside the walls of buildings (Figure 3-14).

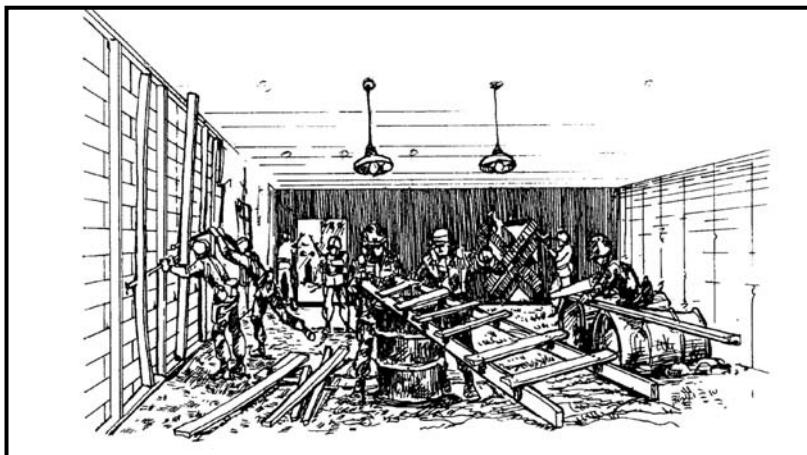


Figure 3-14. Getting lumber from inside the walls.

(2) Although ladders do not permit access to the top of some buildings, they do offer security and safety through speed. Ladders can be used to conduct an exterior assault of an upper level if soldiers' exposure to enemy fire can be minimized.

3-10. USE OF GRAPPLING HOOK

The use of a grappling hook and rope to ascend into a building is not recommended. Experimentation and training has determined that using the grappling hook and rope to ascend is extremely difficult for the average soldier, and makes a unit more likely to fail their mission. Grappling hooks are still a viable tool for accomplishing the following tasks:

- Clearing concertina or other tangle wire.
- Clearing obstacles or barricades that may be booby trapped.
- Descending to lower floors.

3-11. SCALING OF WALLS

When required to scale a wall during exposure to enemy fire, all available concealment must be used. Smoke and diversionary measures improve the chances of success. When using smoke for concealment, soldiers must plan for wind direction. They should use suppressive fire, shouting, and distraction devices from other positions to divert the enemy's attention.

a. A soldier scaling an outside wall is vulnerable to enemy fire. Soldiers who are moving from building to building and climbing buildings should be covered by friendly fire. Properly positioned friendly weapons can suppress and eliminate enemy fire. The M203 grenade launcher is effective in suppressing or neutralizing the enemy from rooms inside buildings (Figure 3-15).

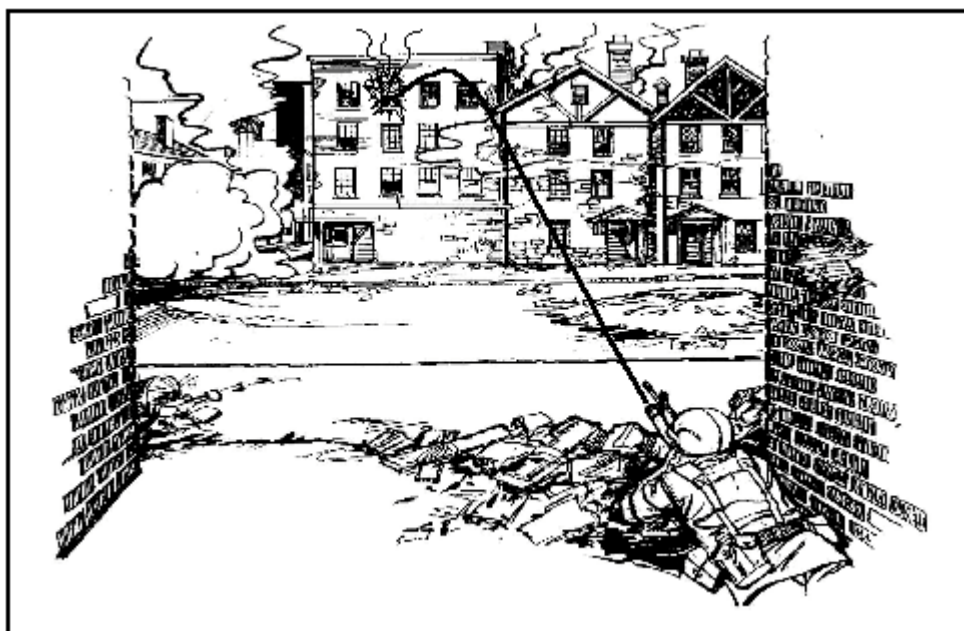


Figure 3-15. Employment of M203 grenade launcher for clearing enemy snipers.

b. If a soldier must scale a wall with a rope, he should avoid silhouetting himself in windows that are not cleared and avoid exposing himself to enemy fires from lower windows. He should climb with his weapon slung over the firing shoulder so he can bring it quickly to a firing position. If the ROE permits, the objective window and any lower level windows in the path of the climber should be engaged with grenades (hand or launcher) before the soldier begins his ascent.

c. The soldier enters the objective window with a low silhouette (Figure 3-16). Entry can be head first; however, the preferred method is to hook a leg over the window sill and enter sideways straddling the ledge.

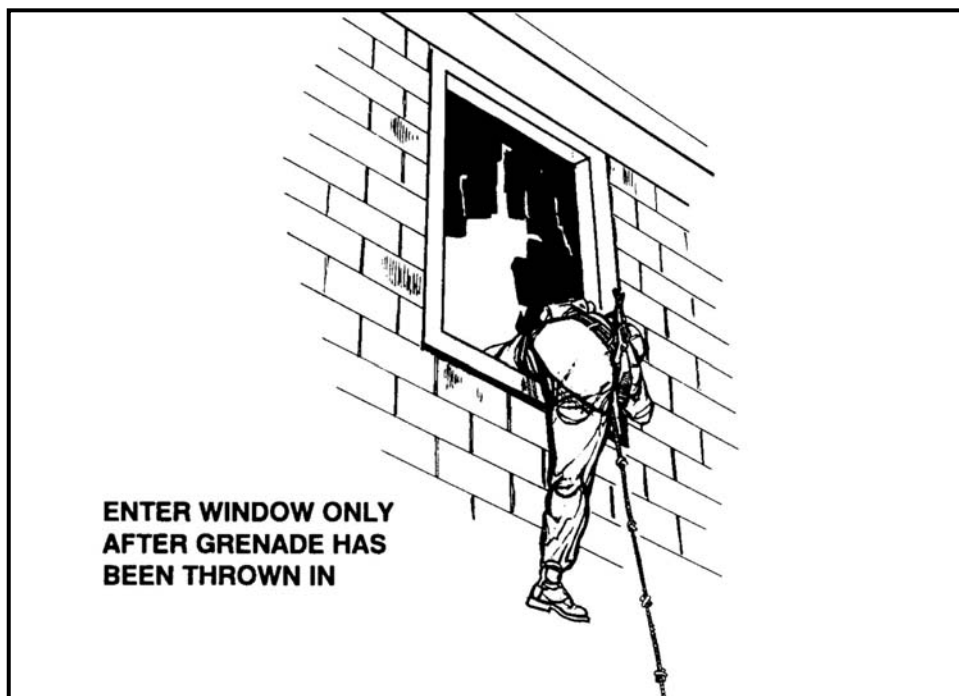


Figure 3-16. Soldier entering the objective window.

3-12. RAPPELLING

Rappelling is an entry technique that soldiers can use to descend from the rooftop of a tall building into a window (Figure 3-17), or through a hole in the floor, in order to descend to the lower floor. (See TC 21-24 for more information on rappelling.)



Figure 3-17. Rappelling.

3-13. ENTRY AT LOWER LEVELS

Buildings should be cleared from the top down. However, entering a building at the top may be impossible. Entry at the bottom or lower level is common and may be the only course of action. When entering a building at lower levels, soldiers avoid entering through windows and doors since both can be easily booby trapped and are usually covered by enemy fire. (Specific lower-level entry techniques are shown in Figure 3-18 on pages 3-13 through 3-15. These techniques are used when soldiers can enter the building without receiving effective enemy fire.)

a. When entering at lower levels, demolitions, artillery, tank fire, antiarmor weapons fire, or similar means can be used to create a new entrance to avoid booby traps. This procedure is preferred if the ROE permit it. Quick entry is then required to take advantage of the effects of the blast and concussion.

b. When the only entry to a building is through a window or door, supporting fire is directed at that location to destroy or drive away enemy forces. The assaulting soldiers should not leave their covered positions before the support by fire element has accomplished this procedure.

c. Before entering, soldiers may throw a cooked off hand grenade into the new entrance to reinforce the effects of the original blast. The type grenade used, fragmentation, concussion, or stun, is based on METT-TC factors and the structural integrity of the building.

(1) When making a new entrance in a building, soldiers consider the effects of the blast on the building and on adjacent buildings. If there is the possibility of a fire in

adjacent building, soldiers coordinate with adjacent units and obtain permission before starting the operation.

(2) In wooden frame buildings, the blast may cause the building to collapse. In stone, brick, or cement buildings, supporting fires are aimed at the corner of the building or at weak points in the building construction.

NOTE: Armored vehicles can be positioned next to a building allowing soldiers to use the vehicle as a platform to enter a room or gain access to a roof.

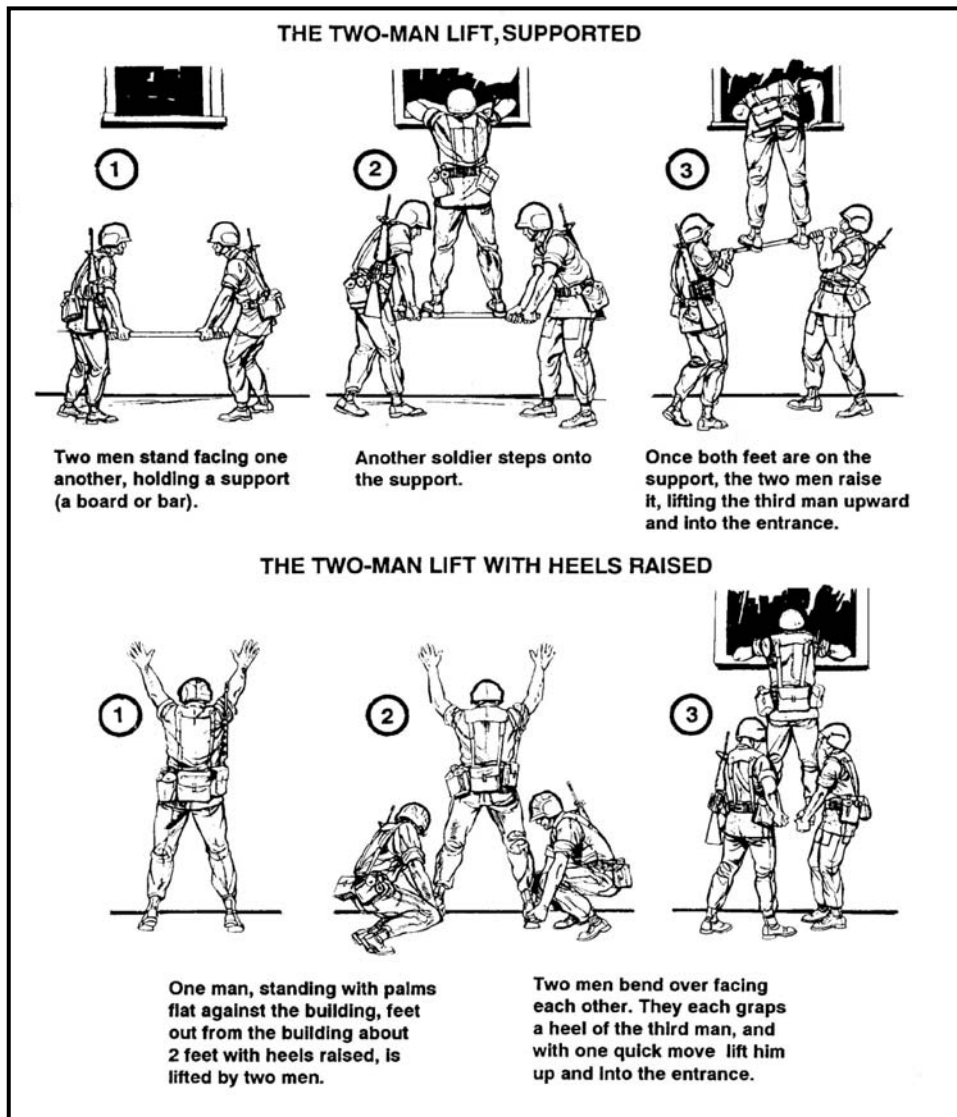


Figure 3-18. Lower-level entry technique.

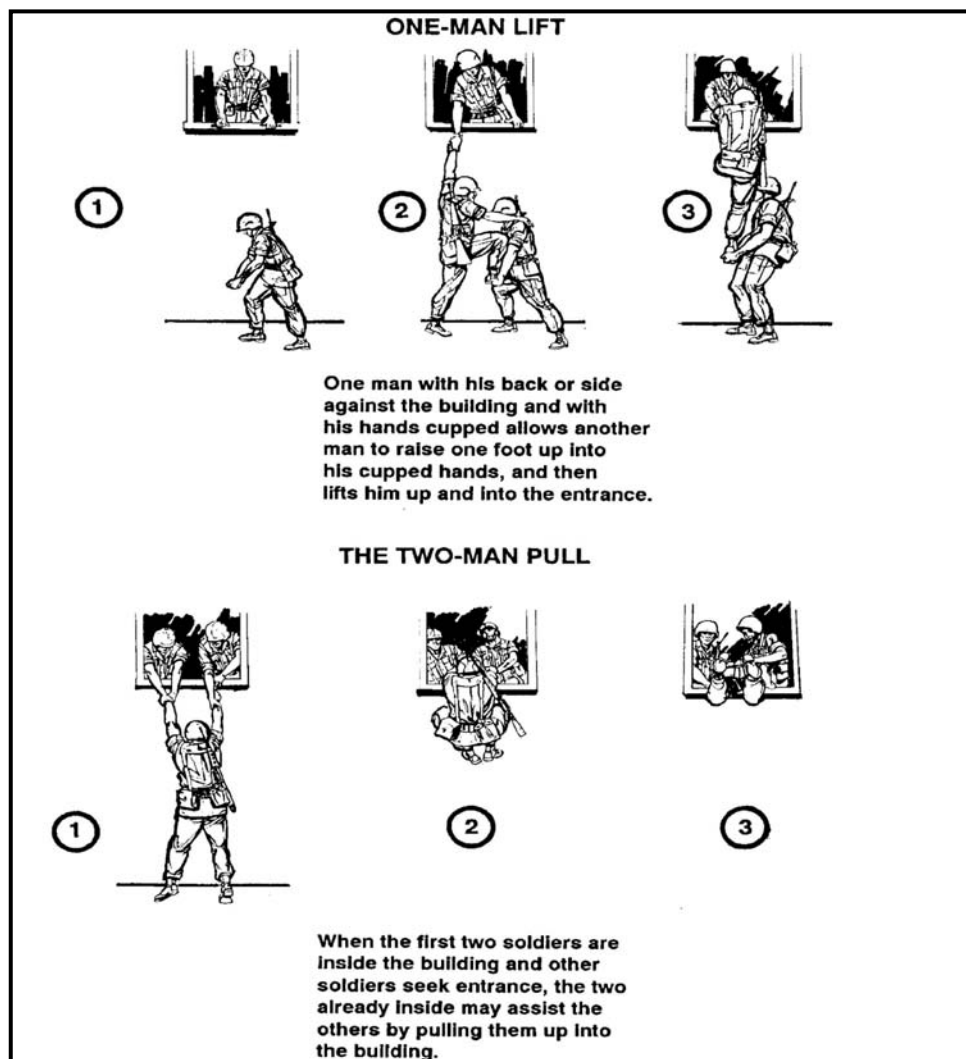


Figure 3-18. Lower-level entry technique (continued).

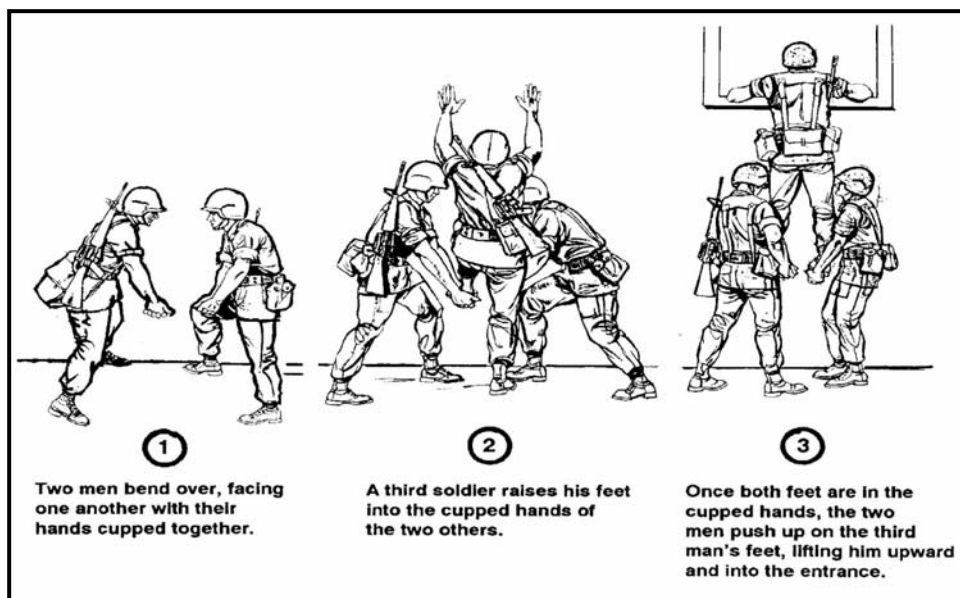


Figure 3-18. Lower-level entry technique (continued).

3-14. USE OF HAND GRENADES

Combat in urban areas often requires extensive use of hand grenades. Unless the ROE prevent it, use grenades before assaulting defended areas, moving through breaches, or entering unsecured areas. Effective grenade use in urban areas may require throwing overhand or underhand, with both the left and right hand. Normally, the fragmentation grenade should be cooked off for two seconds to prevent the enemy from throwing them back.

a. Three types of hand grenades can be used when assaulting an urban objective: stun, concussion, and fragmentation. METT-TC factors and the type of construction materials used in the objective building influence the type of grenades that can be used.

(1) The M84 stun hand grenade is a *flash-bang* distraction device, which produces a brilliant flash and a loud bang to momentarily surprise and distract an enemy force (Figure 3-19, page 3-16). The M84 is often used under precision conditions and when the ROE demand use of a nonlethal grenade. The use of stun hand grenades under high intensity conditions is usually limited to situations where fragmentation and concussion grenades pose a risk to friendly troops or the structural integrity of the building.

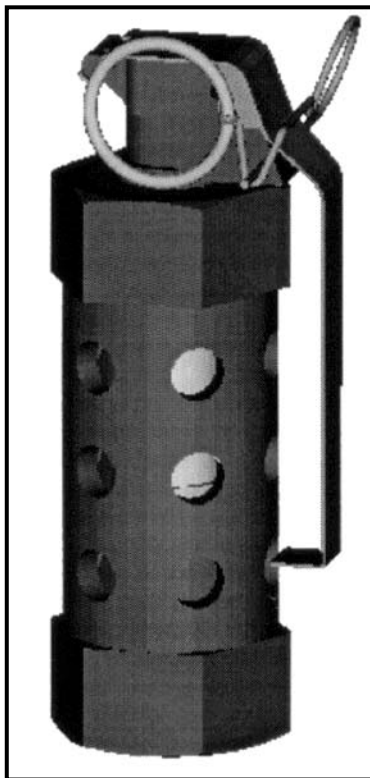


Figure 3-19. M84 stun hand grenade.

(2) The concussion grenade causes injury or death to persons in a room by blast overpressure and propelling debris within the room (Figure 3-20). While the concussion grenade does not discard a dangerous fragmentation from its body, the force of the explosion can create debris fallout that may penetrate thin walls.

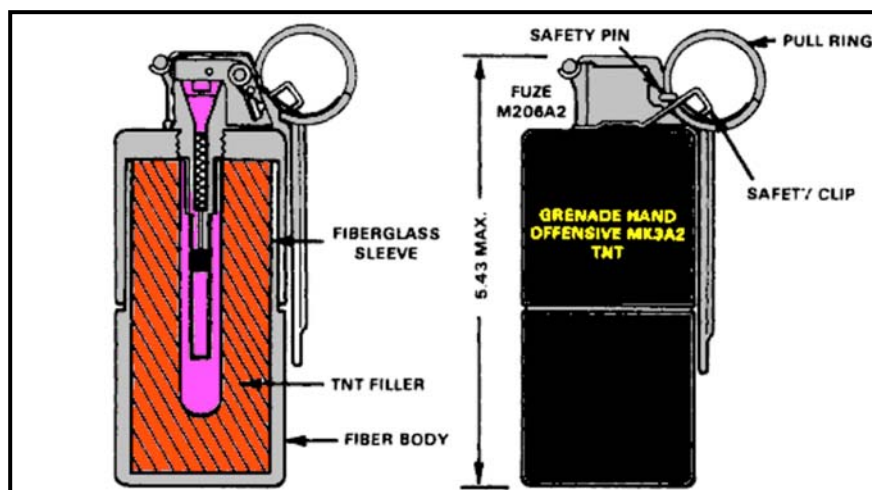


Figure 3-20. MK3A2 (concussion grenade).

(3) The fragmentation grenade (Figure 3-21) produces substantial overpressure when used inside buildings and, coupled with the shrapnel effects, can be extremely dangerous to friendly soldiers. If the walls of a building are made of thin material, such as Sheetrock or thin plywood, soldiers should either lie flat on the floor with their helmet towards the area of detonation, or move away from any wall that might be penetrated by grenade fragments.

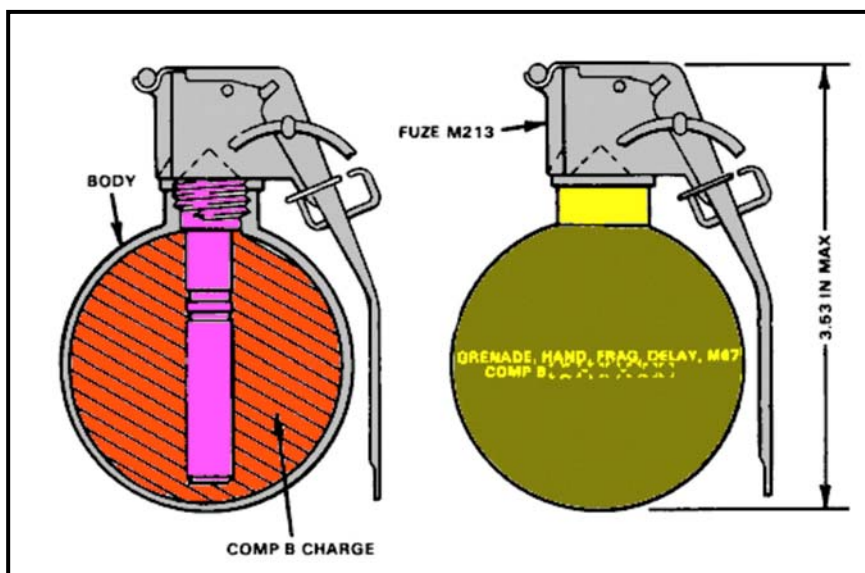


Figure 3-21. Fragmentation grenade.

b. Soldiers should engage upper-level openings with grenades (by hand or launcher) before entering to eliminate enemy that might be near the entrance.

(1) The M203 grenade launcher is the best method for putting a grenade in an upper-story window. The primary round of ammunition used for engaging an urban threat is the M433 high-explosive, dual-purpose cartridge (Figure 3-22, page 3-18). Throwing a hand grenade into an upper-story opening is a task that is difficult to do safely during combat.

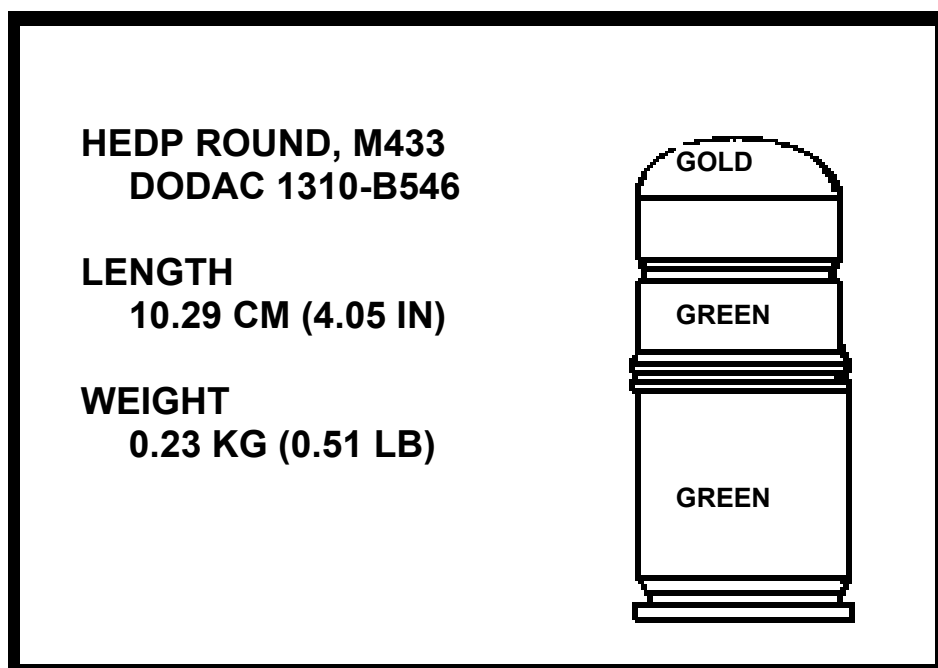


Figure 3-22. 40-mm, tube-launched, high-explosive, dual-purpose (HEDP) grenade.

(2) When a hand grenade must be thrown into an upper-story opening, the thrower should stand close to the building, using it for cover. This technique should only be employed when the window opening is free of glass or screen.

(3) The thrower should allow the grenade to cook off for at least two seconds, and then step out far enough to lob the grenade into the upper-story opening (Figure 3-23). He should keep his weapon in the nonthrowing hand, to be used if needed. The weapon should never be laid outside or inside the building. At the same time, everyone should have a planned area to move to for safety if the grenade does not go through the window but falls back to the ground.

(4) Once the grenade has been thrown into the opening and detonates, assaulting troops must move swiftly to enter the building.



Figure 3-23. Hand grenade thrown through window.

c. If soldiers must enter the building by the stairs, they must first look for booby traps, then engage the stairwell door with a grenade (by hand or launcher), let it detonate, and quickly move inside. They can then use the staircase for cover.

WARNINGS

- 1. If stealth is not a factor, after throwing the grenade the soldier must immediately announce *frag out* to indicate that a grenade has been thrown. He then takes cover since the grenade may bounce back or be thrown back, or the enemy may fire at him.**
- 2. When the M203 grenade launcher is used to deliver the grenade into a window or doorway, ensure proper standoff for arming the round. Also, the assaulting element should take cover around a corner or away from the target area.**

d. Breachholes and mouseholes are blown or cut through a wall so soldiers can enter a building. (See Chapters 4 and 7 for more information.) These are safer entrances than doors because doors can be easily booby trapped and should be avoided, unless explosive breaching is used against the door.

(1) A grenade should be thrown through the breach before entering. Use available cover, such as the lower corner of the building (Figure 3-24), for protection from fragments.

(2) Use stun and concussion grenades when engaging through thin walls.

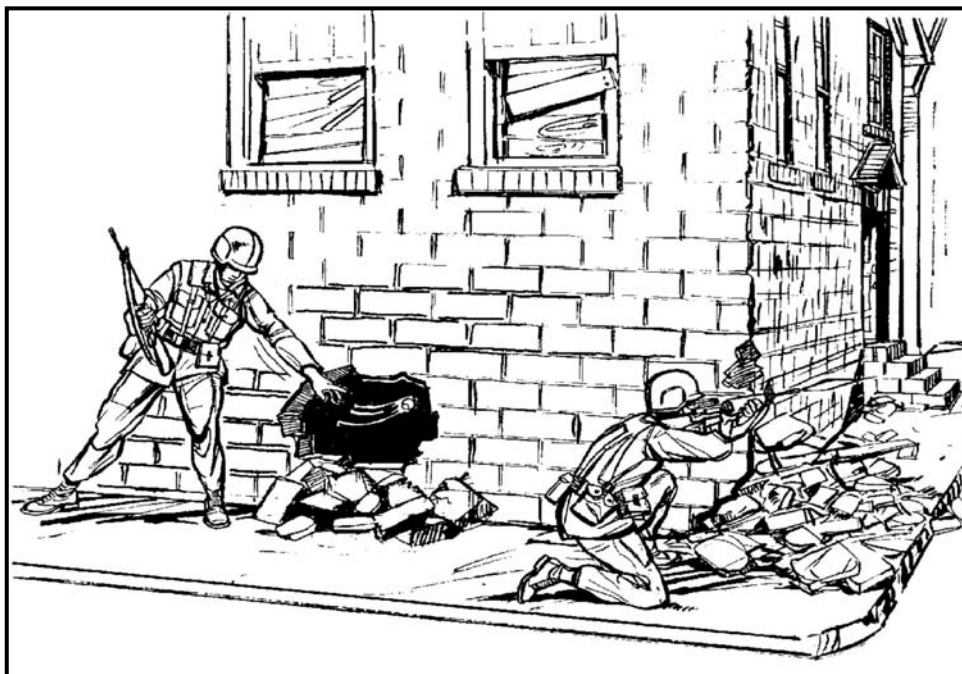


Figure 3-24. Soldier entering through a mousehole.

e. When a door is the only means of entering a building, soldiers must beware of booby traps and fire from enemy soldiers within the room.

(1) Locked doors can be breached (forced open) using one of the four breaching methods: mechanical, ballistic, explosive, or thermal (see Chapter 8). If none of these methods are available, soldiers can resort to kicking the door open. This method is the least preferred since it is difficult and tiring to the soldier. It rarely works the first time, and gives any enemy soldiers in the room ample warning and time to shoot through the door. Once the door is breached, a grenade should precede the soldier's entry.

(2) When opening an unlocked door by hand, the assault team should be sure not to expose themselves to enemy fire through the door. The soldiers should stay close to one side of the doorway to minimize exposure in the open doorframe.

(3) Once the door is open, a hand grenade should be tossed in. After the grenade explodes, soldiers enter and clear the room IAW the tactics, techniques, and procedures discussed in Section III.

f. Although buildings are best cleared from the top down, this procedure is not always possible. While clearing the bottom floor of a building, soldiers may encounter stairs, which must also be cleared. Once again, grenades play an important role.

(1) To climb stairs, first inspect for booby traps, then toss a grenade to the head of the stairs (Figure 3-25). Soldiers must use voice alerts when throwing grenades.

(2) Using the staircase for cover, soldiers throw the grenade underhand to reduce the risk of it bouncing back and rolling down the stairs.

(3) Once the first grenade has detonated, another grenade should be thrown over and behind the staircase banister and into the hallway, neutralizing any exposed enemy in the hallway.

(4) When the second hand grenade has detonated, soldiers proceed to clear the stairway in accordance with prescribed TTP.

NOTE: Large quantities of hand grenades are used when clearing buildings. A continuous supply must be available.



Figure 3-25. Soldier tossing grenade up stairway.

CAUTION

Throwing fragmentation grenades up a stairway has a high probability for the grenades to roll back down and cause fratricide. Soldiers should avoid clustering at the foot of the stairway and ensure that the structural integrity of the building permits the use of either a fragmentation or concussion grenade.

3-15. INDIVIDUAL WEAPONS CONTROL WHEN MOVING

As in all combat situations, the clearing team members must move tactically and safely. Individuals who are part of a clearing team must move in a standard manner, using practiced techniques known to all.

a. When moving, team members maintain *muzzle awareness* by holding their weapons with the muzzle pointed in the direction of travel. Soldiers keep the butt of the rifle in the pocket of their shoulder, with the muzzle slightly down to allow unobstructed vision. Soldiers keep both eyes open and swing the muzzle as they turn their head so the rifle is always aimed where the soldier is looking. This procedure allows to soldier to see what or who is entering their line of fire.

b. Team members avoid *flagging* (leading) with the weapon when working around windows, doors, corners, or areas where obstacles must be negotiated. Flagging the weapon gives advance warning to anyone looking in the soldier's direction, making it easier for an enemy to grab the weapon.

c. Team members should keep weapons on safe (selector switch on SAFE and index finger outside of trigger guard) until a hostile target is identified and engaged. After a team member clears his sector of all targets, he returns his weapon to the SAFE position.

d. If a soldier has a weapons malfunction during room clearing, he should immediately announce "gun down" and drop to one knee and conduct immediate action to reduce the malfunction. The other members of the team should engage targets in his sector. Once the weapon is operational, he should announce "gun up" and remain in the kneeling position until directed to stand-up by the team leader.

Section III. CLEARING

Infantry units often use close combat to enter and clear buildings and rooms. This section describes the TTP for clearing.

3-16. HIGH INTENSITY VERSUS PRECISION CLEARING TECHNIQUES

Precision clearing techniques do not replace other techniques currently being used to clear buildings and rooms during high-intensity combat. Specifically, they do not replace the clearing technique in which a fragmentation or concussion grenade is thrown into a room before the US forces enter. Precision room clearing techniques are used when the tactical situation calls for room-by-room clearing of a relatively intact building in which enemy combatants and noncombatants may be intermixed. They involve increased risk in order to clear a building methodically, rather than using overwhelming firepower to eliminate or neutralize all its inhabitants.

a. From a conceptual standpoint, standard high-intensity room clearing drills can be thought of as a deliberate attack. The task is to seize control of the room with the purpose being the neutralization of the enemy in the room. The fragmentation and or concussion grenades can be thought of as the preparatory fires used before the assault. As in a deliberate attack against any objective, the assaulting elements move into position using covered and concealed routes. The preparatory fires (fragmentation and or concussion grenades) are initiated when soldiers are as close to the objective as they can get without being injured by the fires. The assault element follows the preparatory fires onto the

objective as closely as possible. A rapid, violent assault overwhelms and destroys the enemy force and seizes the objective.

b. Compared to the deliberate attack represented by high-intensity room clearing techniques, precision room clearing techniques are more conceptually like a reconnaissance in force or perhaps an infiltration attack. During a reconnaissance in force, the friendly unit seeks to determine the enemy's locations, dispositions, strength, and intentions. Once the enemy is located, the friendly force is fully prepared to engage and destroy it, especially if surprise is achieved. The friendly force retains the options of not employing preparatory fires (fragmentation and or concussion grenades) if they are not called for (the enemy is not in the room) or if they are inappropriate (there are noncombatants present also). The attacking unit may choose to create a diversion (use a stun grenade) to momentarily distract the defender while they enter and seize the objective.

c. The determination of which techniques to employ is up to the leader on the scene and is based on his analysis of the existing METT-TC conditions. The deliberate attack (high-intensity techniques), with its devastating suppressive and preparatory fires, neutralizes everyone in the room and is less dangerous to the assaulting troops. The reconnaissance in force (precision techniques) conserves ammunition, reduces damage, and minimizes the chance of noncombatant casualties. Unfortunately, even when well-executed, it is very stressful and hazardous for friendly troops.

d. Certain precision room clearing techniques, such as methods of squad and fire team movement, the various firing stances, weapon positioning, and reflexive shooting, are useful for all combat in confined areas. Other techniques, such as entering a room without first neutralizing known enemy occupants by fire or explosives, are appropriate in only some tactical situations.

e. Generally, if a room or building is occupied by an alerted enemy force that is determined to resist, and if most or all noncombatants are clear, overwhelming firepower should be employed to avoid friendly casualties. In such a situation, supporting fires, demolitions, and fragmentation grenades should be used to neutralize a space before friendly troops enter.

f. In some combat situations the use of heavy supporting fires and demolitions would cause unacceptable collateral damage or would unnecessarily slow the unit's movement. In other situations, often during stability and support operations, enemy combatants are so intermixed with noncombatants that US forces cannot, in good conscience, use all available supporting fires. Room-by-room clearing may be necessary. At such times, precision room clearing techniques are most appropriate.

3-17. PRINCIPLES OF PRECISION ROOM CLEARING

Battles that occur at close quarters, such as within a room or hallway, must be planned and executed with care. Units must train, practice, and rehearse precision room clearing techniques until each fire team and squad operates smoothly. Each unit member must understand the principles of precision room clearing: surprise, speed, and controlled violence of action.

a. **Surprise.** Surprise is the key to a successful assault at close quarters. The fire team or squad clearing the room must achieve surprise, if only for seconds, by deceiving, distracting, or startling the enemy. Sometimes stun grenades may be used to achieve

surprise. These are more effective against a nonalert, poorly trained enemy than against alert, well-trained soldiers.

b. **Speed.** Speed provides a measure of security to the clearing unit. It allows soldiers to use the first few vital seconds provided by surprise to their maximum advantage. In precision room clearing, speed is not how fast you enter the room, rather it's how fast the threat is eliminated and the room is cleared.

c. **Controlled Violence of Action.** Controlled violence of action eliminates or neutralizes the enemy while giving him the least chance of inflicting friendly casualties. It is not limited to the application of firepower only, but also involves a soldier mind-set of complete domination. Each of the principles of precision room clearing has a synergistic relationship to the others. Controlled violence coupled with speed increases surprise. Hence, successful surprise allows increased speed.

3-18. FUNDAMENTALS OF PRECISION ROOM CLEARING

The ten fundamentals of precision room clearing address actions soldiers take while moving along confined corridors to the room to be cleared, while preparing to enter the room, during room entry and target engagement, and after contact. Team members—

- Move tactically and silently while securing the corridors to the room to be cleared.
- Carry only the minimum amount of equipment. (Rucksacks and loose items carried by soldiers tire them, slow their pace, and cause noise.)
- Arrive undetected at the entry to the room in the correct order of entrance, prepared to enter on a single command.
- Enter quickly and dominate the room. Move immediately to positions that allow complete control of the room and provide unobstructed fields of fire.
- Eliminate all enemy in the room by fast, accurate, and discriminating fires.
- Gain and maintain immediate control of the situation and all personnel in the room.
- Confirm whether enemy casualties are wounded or dead. Disarm, segregate, and treat the wounded. Search all enemy casualties.
- Perform a cursory search of the room. Determine if a detailed search is required.
- Evacuate all wounded and any friendly dead.
- Mark the room as cleared using a simple, clearly identifiable marking in accordance with the unit SOP.
- Maintain security and be prepared to react to more enemy contact at any moment. Do not neglect rear security.

3-19. COMPOSITION OF THE CLEARING TEAM

Precision room clearing techniques are designed to be executed by the standard four-man fire team. Because of the confined spaces typical of building- and room-clearing operations, units larger than squads quickly become unwieldy. When shortages of personnel demand it, room clearing can be conducted with two- or three-man teams, but four-man teams are preferred. Using fewer personnel greatly increases the combat strain and risks.

3-20. BREACHING

An integral part of precision room clearing is the ability to gain access quickly to the rooms to be cleared. Breaching techniques vary based on the type of construction encountered and the types of munitions available to the breaching element. Techniques range from simple mechanical breaching to complex, specialized demolitions.

a. A useful method of breaching is the *shotgun ballistic* breach for forced entry of standard doors. A 12-gauge shotgun loaded with buckshot or slugs can be used to breach most standard doors quickly. Number 9 shot works equally well with reduced collateral damage on the other side of the door. When done properly, the shotgun breach requires only a few seconds. The two standard techniques of shotgun breaching are the *doorknob breach* and the *hinge breach*. When attempting either technique, the gunner is announcing his presence by using the shotgun and is completely exposed to fire through the door. Therefore, exposure time must be minimized and the number 1 man must be ready to gain entry and return fire as soon as possible. While holding the stock of the shotgun in the pocket of his shoulder, the gunner places the muzzle tightly against the door, and aims down at a 45-degree angle.

NOTE: If the shotgun muzzle is not held tightly against the door, splatter may occur that could affect friendly troops. Also, buckshot and rifled slugs can overpenetrate doors and may kill or wound occupants in the room.

(1) For the doorknob breach, the aim point is a spot halfway between the doorknob and the frame, not at the doorknob itself. The gunner fires two quick shots in the same location, ensuring the second shot is aimed as carefully as the first. Weak locks may fly apart with the first shot, but the gunner should always fire twice. Some locks that appear to be blown apart have parts still connected that can delay entry. If the lock is not defeated by the second shot, the gunner repeats the procedure. Doors may not always open after firing. The gunner should be prepared to kick the door after firing to ensure opening of the entry point.

(2) The hinge breach technique is performed much the same as the doorknob breach, except the gunner aims at the hinges. He fires three shots per hinge—the first at the middle, then at the top and bottom (Figure 3-26, page 3-26). He fires all shots from less than an inch away from the hinge. Because the hinges are often hidden from view, the hinge breach is more difficult. Hinges are generally 8 to 10 inches from the top and bottom of the door; the center hinge is generally 36 inches from the top, centered on the door. Regardless of which technique the gunner uses, immediately after he fires, he kicks the door in or pulls it out. He then pulls the shotgun barrel sharply upward and quickly turns away from the doorway to signal that the breach point has been cleared. This rapid clearing of the doorway allows the following man in the fire team a clear shot at any enemy who may be blocking the immediate breach site.

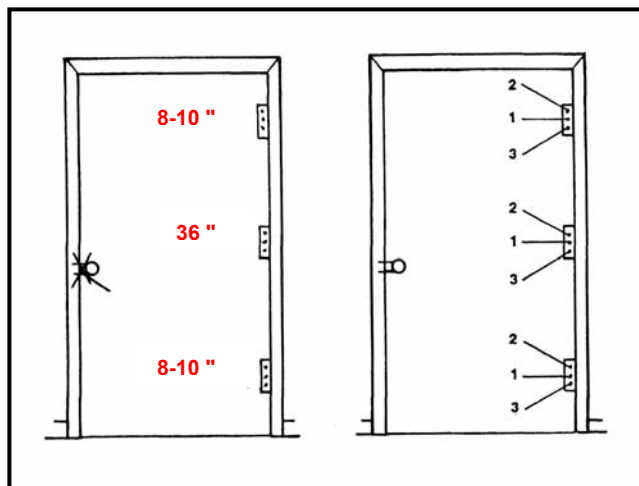


Figure 3-26. Aim points for shotgun breach of a standard door, doorknob target on left and hinge targets on right.

NOTE: The use of small arms (5.56-mm or 7.62-mm) as a ballistic breach on doorknobs and hinges is unsafe and should only be used as a last resort.

b. Demolitions are often needed to defeat more elaborate barriers or to produce a desired effect to aid the initial entry. (See Chapter 8 for a discussion of expedient demolitions for breaching common urban barriers.)

c. Mechanical breaching is planned as a backup to a ballistic or explosive breach. Mechanical breaching is an assumed capability within all units. Taking the time to defeat weak barriers, such as doors or windows, by means of crowbars, saws, sledgehammers, battering rams, axes, or other breaching tools is a decision that must be made based on the conditions of METT-TC.

d. Clearing team members must approach the breach point quickly, quietly, and in standard order. This approach preserves the element of surprise and allows for quick entry and domination of the room. The order of movement to the breach point is determined by the method of breach and intended actions at the breach point. The members of the fire team are assigned numbers 1 through 4, with the team leader normally designated number 2. If one member of the clearing team is armed with the SAW rather than an M16 rifle or carbine, he should be designated number 4.

(1) **Ballistic (Shotgun) Breach.** The order of movement for a shotgun breach has the gunner up front, followed by the number 1 man, number 2 man (team leader), and then the number 3 man. After the door is breached, the gunner moves to the rear of the lineup and assumes the position of the number 4 man.

(2) **Explosive (Demolition) Breach.** The order of movement for an explosive breach without engineer support is number 1, number 2 (team leader), number 3, and then number 4. The number 1 man provides security at the doorway. The number 2 man (team leader) carries the demolition charge and places it. The number 3 man provides security overhead, and the number 4 man provides rear security. After the demolition charge is placed, the team moves to covered positions and prepares to enter in the standard 1, 2, 3, 4 order. (Refer to Chapter 8 for information concerning minimum safe distances.)

Section VII. PLATOON DEFENSIVE OPERATIONS

In urban areas, buildings provide cover and concealment, limit fields of observation and fire, and restrict the movement of troops and armored vehicles. This section covers the key planning considerations, weapons selection, preparations, and the construction of a platoon defensive position on urbanized terrain.

5-29. PLANNING THE DEFENSE

Planning the defense begins when the leader receives a mission or determines a requirement to defend such as during consolidation and reorganization after an assault. The leader must use terrain wisely and designate a point of main effort. He chooses defensive positions that force the enemy to make costly attacks or conduct time-consuming maneuvers to avoid them. A position that the enemy can readily avoid has no defensive value unless the enemy can be induced to attack it. The defense, no less than the offense, should achieve surprise. As platoon leaders conduct their troop-leading procedures, they also have to consider civilians, ROE, limited collateral damage, and coordination with adjacent units to eliminate the probability of fratricide. Maneuver, methods, and courses of action in establishing defensive positions in and around urbanized terrain are METT-TC intensive.

a. **Focus.** The squad's and platoon's focus for defending in an urban area is the retention of terrain. As with most defensive scenarios, the squad and platoon will defend as part of the company. The platoon will either be given a sector to defend or a battle position to occupy and the platoon leader must construct his defense within the constraints given to him. See Sections II and III for other planning considerations.

b. **Strongpoint.** One of the most common defensive tasks a platoon will be given during urban operations is to conduct a strongpoint defense of a building, part of a building, or a group of small buildings (see paragraph 5-27 and Figure 5-21). The platoon's defense is normally integrated into the company's mission. The platoon leader organizes the strongpoint defense by positioning personnel and their weapons systems to maximize their capabilities. Supporting fires are incorporated into the overall defensive plan to provide depth to the engagement area.

(1) The platoon leader organizes the defense into a series of individual, team, and squad fighting positions located to cover avenues of approach and obstacles, and to provide mutual support in order to repel the enemy advance. Snipers should be positioned to support the commander's intent and to allow for the opportunity to engage C2 and key targets.

(2) Depending on the length of the mission, the platoon should stockpile munitions (especially grenades), food and water, medical supplies, and fire-fighting equipment.

5-30. PRIORITIES OF WORK AND DEFENSIVE CONSIDERATIONS

A critical platoon- and squad-level defensive task during defensive urban operations is the preparation of fighting positions. General defensive considerations in urban terrain are similar to any other defensive operations. Fighting positions in urban areas are usually constructed inside buildings and are selected based on an analysis of the area in which the building is located, the individual characteristics of the building, and the characteristics of the weapons system.

a. **Priorities of Work.** The priorities of work are the same as those listed in paragraph 5-13. Specific considerations at platoon level are discussed below.

(1) Select key weapons and crew-served weapon positions to cover likely mounted and dismounted avenues of approach. To cover armored avenues of approach, position antiarmor weapons inside buildings with adequate space and ventilation for backblast (on upper floors, if possible, for long-range shots). Position machine guns/M249s to cover dismounted avenues of approach. Place them near ground level to increase grazing fires. If ground rubble obstructs grazing fires, place machine guns/M249s in the upper stories of the building. Ensure weapons are mutually supporting and are tied in with adjacent units.

(2) Ensure the position is free of noncombatants. Remove them from the area of operations before occupying the position.

(3) Clear fields of fire. Prepare loopholes, aiming stakes, sector stakes, and TRP markings. Construct positions with overhead cover and camouflage (inside and outside).

(4) Identify and secure subsurface avenues of approach (sewers, basements, stairwells, and rooftops).

(5) Stockpile ammunition, food, fire-fighting equipment, and drinking water.

(6) Construct barriers and emplace obstacles to deny the enemy any access to streets, underground passages, and buildings, and to slow his movement. Integrate barriers and or obstacles with key weapons. Cover all barriers and obstacles by fire (both direct and indirect) and or observation. (See Chapter 8 for more information concerning obstacles.)

(7) Improve and mark movement routes between positions as well as to alternate and supplementary positions. Improve routes by digging trenches, if possible; using sewers and tunnels; creating entry holes; and positioning ropes and ladders for ascending and descending.

b. **Considerations.** The following must be considered when establishing a defensive position.

(1) **Security.** The first priority is establishing all-around security. Each position should have at least one soldier providing security during all preparations.

(2) **Protection.** Select buildings that provide protection from direct and indirect fires. Reinforced concrete buildings with three or more floors provide suitable protection while buildings constructed of wood, paneling, or other light material must be reinforced to provide sufficient protection. One- and two-story buildings without a strongly constructed cellar are vulnerable to indirect fires and require construction of overhead protection for each fighting position. If possible, use materials gathered from the immediate area to build the overhead cover.

(3) **Dispersion.** A platoon position should not be established in a single building when it is possible to occupy two or more buildings that permit mutually supporting fires. A position without mutual support in one building is vulnerable to bypass, isolation, and subsequent destruction from any direction.

(4) **Concealment.** Do not select buildings that are obvious defensive positions (easily targeted by the enemy). If the requirements for security and fields of fire dictate the occupation of exposed buildings, the platoon will be required to add reinforcement materials to the building to provide suitable protection to the troops inside.

(5) **Fields of Fire.** To prevent isolation, individual and crew-served weapons positions should be mutually supporting and have fields of fire in all directions. When

clearing fields of fire, try to maintain the natural appearance of the surrounding area if possible. Removing objects that interfere with the gunner's field of vision may be necessary.

(6) **Covered Routes.** Defensive positions should have at least one covered and concealed route that allows resupply, medical evacuation, reinforcement, or withdrawal from the building without being detected, or at least provides protection from direct fire weapons. The route can be established using underground systems, communications trenches, or walls and buildings that allow covered movement.

(7) **Observation.** Positions in buildings should permit observation of enemy avenues of approach and adjacent defensive sectors. Upper stories offer the best observation but also attract enemy fire.

(8) **Fire Hazard.** If possible, avoid selecting positions in buildings that are obvious fire hazards. If these flammable structures must be occupied, reduce the danger of fire by wetting down the immediate area, laying an inch of sand on the floors, and providing fire extinguishers and fire fighting equipment. Ensure that each defender is familiar with the withdrawal routes and that they have the opportunity to rehearse their withdrawal using these planned routes in the event of fire.

(9) **Tag Lines.** Tag lines are a flexible handhold used to guide individuals along a route. Tag lines aid in navigation and movement when operating in confined spaces such as buildings, tunnel systems and caverns where visibility is limited and sense of direction can be lost. When preparing defensive positions inside buildings, tag lines can be run from each fighting position back to the command post, or along an egress route. These lines can be made of rope, string, cable, wire and so forth. The most effective item to be used as a tag line is WD-1A communications wire. Along with serving as a tag line it can be used as a primary means of communication between individual fighting positions and leader's positions.

(10) **Time.** Time is the one element in METT-TC that the platoon and its leaders have no control over. The most important factor to consider when planning the use of time is to provide subordinate leaders with two-thirds of all available time. The unit TACSOP provides the leaders with their priorities when time does not allow for detailed planning. The platoon will complete defensive preparation IAW the TACSOP and the commander's operational priorities.

c. **Preparation.** Preparation of the platoon's individual fighting positions will normally be conducted inside the buildings the platoon has been assigned to defend. As with all defensive positions, the leader's first task is to establish security. This will normally be in the form of an observation post located within the protection of the platoon's direct fire weapons. The OP should be manned with at least two personnel. Leaders then assign individual or two-man positions to adequately cover his sector. The squad leader will position himself to best control his squad. The platoon leader will designate the level of security to be maintained. The remaining personnel will continue to work preparing the defense. The leaders will continue to make improvements to the defense as time permits. (The preparation of fighting positions is discussed in detail in Chapter 3.)

d. **Other Typical Tasks.** Additional defensive preparation tasks may be required in basements, on ground floors, and on upper floors.

(1) **Basements and Ground Floors.** Basements require preparation similar to that of the ground floor. Any underground system not used by the defender that could provide enemy access to the position must be blocked.

(a) **Doors.** Unused doors should be locked or nailed shut, as well as blocked and reinforced with furniture, sandbags, or other field expedients.

(b) **Hallways.** If not required for the defender's movement, hallways should be blocked with furniture and tactical wire (Figure 5-23).

(c) **Stairs.** Unused stairs should be blocked with furniture and tactical wire, or removed. If possible, all stairs should be blocked (Figure 5-23), and ladders should be used to move from floor to floor and then removed.

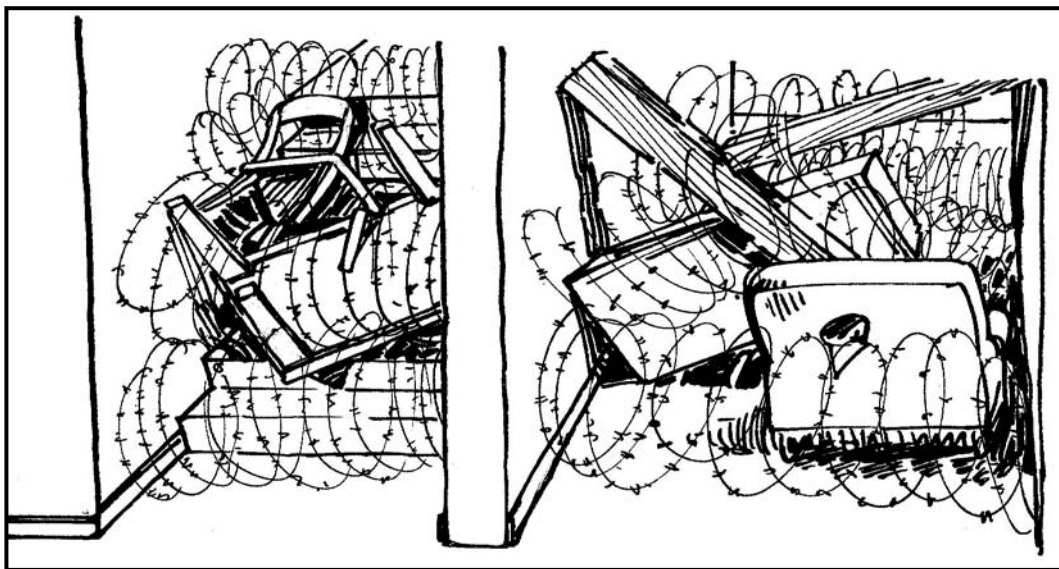


Figure 5-23. Blocking stairs and doorways.

(d) **Windows.** Remove all glass. Block unused windows with boards or sandbags to prevent observation and access.

(e) **Floors.** Make fighting positions in the floors. If there is no basement, fighting positions can give additional protection from heavy direct-fire weapons.

(f) **Ceilings.** Erect support for ceilings that otherwise would not withstand the weight of fortified positions or rubble from upper floors (Figure 5-24).

(g) **Unoccupied Rooms.** Block rooms not required for defense with tactical wire.

(2) **Upper Floors.** Upper floors require the same preparation as ground floors. Windows need not be blocked, but should be covered with wire mesh, canvas, ponchos, or other heavy material, to prevent grenades from being thrown in from the outside. The covering should be loose at the bottom to permit the defender to drop grenades.

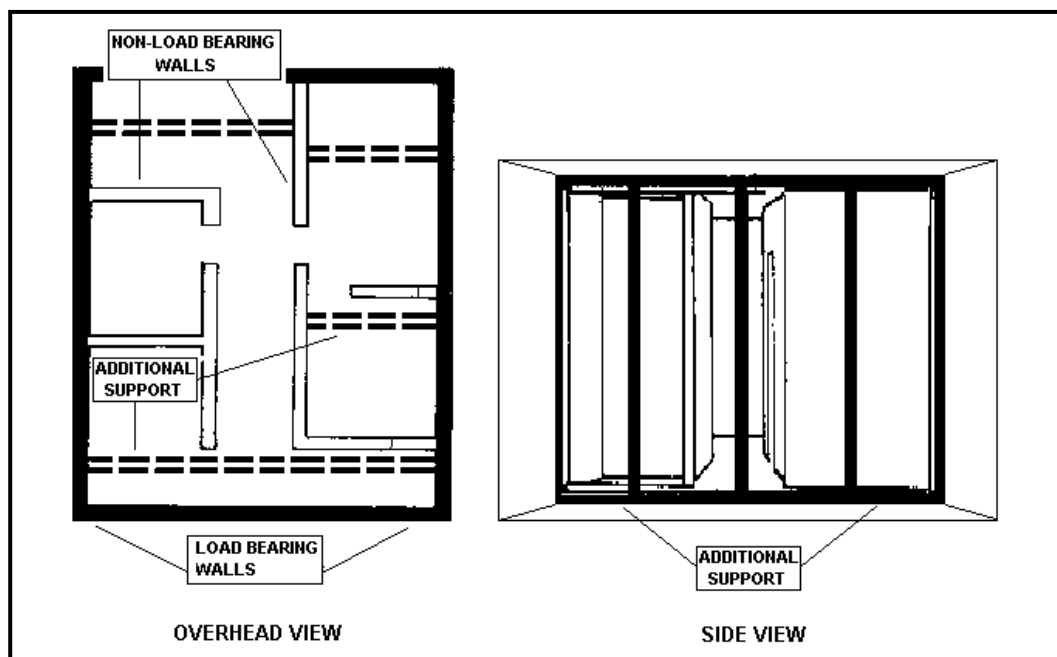


Figure 5-24. Reinforcing ceilings.

(3) **Interior Routes.** Routes are required that permit defending fire teams and squads to move within the building (Figure 5-25) to engage enemy forces from any direction. Plan and construct escape routes to permit rapid evacuation of a room or a building. Mouseholes should be made through interior walls to permit movement between rooms. Such holes should be marked to enable defenders to easily locate them during day and night conditions. Brief all personnel as to where the various routes are located. Conduct rehearsals so that everyone becomes familiar with the routes.



Figure 5-25. Movement routes within building.

(4) **Fire Prevention.** Buildings that have wooden floors and rafter ceilings require extensive fire prevention measures. Cover the attic and other wooden floors with about one to two inches of sand or dirt, and position buckets of water for immediate use. Place fire-fighting materials (dirt, sand, fire extinguishers, and blankets) on each floor for immediate use. Fill water basins and bathtubs as a reserve for fire fighting. Turn off all electricity and gas. If available, use any existing fire extinguishers found in buildings.

(5) **Communications.** Conceal radio antennas by placing them among civilian television antennas, along the sides of chimneys and steeples, or out of windows that would direct FM communications away from enemy early-warning sources and ground observation. Lay wire through adjacent buildings or underground systems or bury them in shallow trenches. Lay wire communications within the building through walls and floors.

(6) **Rubbling.** See paragraph 5-12c(8).

(7) **Rooftops.** Platoons must position obstacles on the roofs of flat-topped buildings to prevent helicopters from landing and to deny troops from gaining access to the building from the roof. Cover rooftops that are accessible from adjacent structures with tactical wire or other expedients and guard them. Block entrances to buildings from rooftops if compatible with the overall defensive plan. Remove or block the structure on the outside of a building that could aid the attacker in scaling the building to gain access to upper floors or to the rooftop.

(8) **Obstacles.** Position obstacles adjacent to buildings to stop or delay vehicles and infantry. To save time and resources in preparing the defense, platoon leaders must allow the use of all available materials, such as automobiles, railcars, and rubble, to create obstacles. Vehicles can be tied together by running poles through their windows. Leaders must supervise the construction of obstacles to ensure they are tied to buildings and rubble areas to increase effectiveness, and to canalize the enemy into engagement areas selected by the leader. Direct support engineers can provide advice and resources as to the employment of obstacles and mines.

(9) **Fields of Fire.** The field of fire is the area a weapon or group of weapons may cover effectively with fire from a given position. After the defensive positions are selected and the individuals have occupied their assigned positions, they will determine what clearance is necessary to maximize their field of fire. Leaders and individuals must view fields of fire from the fighting position and from the view of the enemy. Only selective clearing will be done to improve the field of fire. If necessary, the position will be relocated to attain the desired field of fire. Within the field of fire leaders will designate for each weapons system a primary and an alternate sector of fire. Each weapons system has unique requirements for its field of fire, and the platoon and squad leaders must ensure these requirements are met. Each position is checked to ensure that the fields of fire provide the maximum opportunity for target engagement and to determine any dead space within the sector of fire.

e. **Antitank Weapons Positions.** Employ antitank weapons in areas that maximize their capabilities in the urban area. The lack of a protective transport could require the weapon to be fired from inside a building, from behind the cover of a building, or from behind the cover of protective terrain. Leaders should make every effort to employ antitank weapons in pairs so that the same target can be engaged from different positions. Another consideration is security for the crew and system. This is necessary to allow the gunner to concentrate on locating and engaging enemy armor.

f. **Sniper Positions.** Snipers give the platoon a force multiplier by providing an overwatch capability and by engaging enemy C2 targets. Snipers normally operate in two-man teams, which provides the shooter with security and another set of eyes for observation and to locate and identify targets. Leaders should allow the snipers to select their own positions for supporting the defense. An effective sniper organization can trouble the enemy far more than its cost in the number of friendly soldiers employed. Snipers deploy in positions where they are not easily detected, and where they can provide the most benefit. (See Chapter 6.)

5-31. CONDUCT OF THE DEFENSE

The conduct of the defense in an urban area is similar to the conduct of the defense in any other environments.

a. **Occupy Positions.** After planning and preparing for the defense, the platoon moves to the defensive positions using prescribed movement techniques. To establish the defense the platoon will stop short of the actual site and conduct a reconnaissance to ensure the area is free of enemy or noncombatants, and to identify individual and crew served weapons positions. The platoon then establishes security and begins to occupy positions. Once the platoon has occupied, the priorities of work will be performed as established by the platoon leader.

b. **Locate the Enemy.** The platoon establishes and maintains OPs and conducts security patrols as directed by the commander. OPs, patrols, and individual soldiers look and listen using night vision devices, binoculars, and early warning systems to detect the enemy's approach.

c. **Action on Contact.** Once the enemy is detected, the platoon leader—

- Alerts the platoon sergeant, squad leaders and forward observer.
- Reports the situation to the company commander.
- If possible, calls in OP's.
- Initiates indirect fire mission when enemy is at maximum range.
- Initiates long-range direct fires on command.

d. **Fight the Defense.** Determining that the platoon can destroy the enemy from their current positions, the platoon leader—

- Continues with indirect and direct fire engagements.
- Controls fires using standard commands, pyrotechnics, and other prearranged signals.
- Initiates FPF as the enemy closes on the protective wire.

The platoon continues to defend until the enemy is repelled or ordered to disengage.

5-32. CONSOLIDATION AND REORGANIZATION

Once the enemy has been repelled, the order to consolidate and reorganize will be given by the platoon leader.

a. The platoon will—

- Reestablish security.
- Reassemble key weapons.
- Provide first aid and prepare to evacuate casualties.
- Repair damaged obstacles and replace mines and early warning devices.
- Redistribute ammunition and supplies.

(3) **Mechanical Breach.** A suggested order of movement for a mechanical breach is the initial assault team in order, followed by the breach man or element. At the breach point, the assault team leader brings the breach team forward while the assault team provides local security. After the breach is conducted, the breach team moves aside and provides local security as the assault team enters the breach.

3-21. CONSIDERATIONS FOR ENTRY

The entire team enters the room as quickly and smoothly as possible and clears the doorway immediately. If possible, the team moves from a covered or concealed position already in their entry order. Ideally, the team arrives and passes through the entry point without having to stop.

a. The door is the focal point of anyone in the room. It is known as the *fatal funnel*, because it focuses attention at the precise point where the individual team members are the most vulnerable. Moving into the room quickly reduces the chance anyone being hit by enemy fire directed at the doorway.

b. On the signal to go, the clearing team moves from covered or concealed positions through the door quickly and takes up positions inside the room that allow it to completely dominate the room and eliminate the threat. Team members stop movement only after they have cleared the door and reached their designated point of domination. The first man's position is deep into the near corner of the room. The depth of his movement is determined by the size of the room, any obstacles in the room, such as furniture, and by the number and location of enemy and noncombatants in the room.

c. To make precision room clearing techniques work, each member of the team must know his sector of fire and how his sector overlaps and links with the sectors of the other team members. Team members do not move to the point of domination and then engage their targets. They engage targets as they move to their designated point. However, engagements must not slow movement to their points of domination. Team members may shoot from as short a range as 1 to 2 inches. They engage the most immediate enemy threats first. Examples of immediate threats are enemy personnel who—

- Are armed and prepared to return fire immediately.
- Block movement to the position of domination.
- Are within arm's reach of a clearing team member.
- Are within 3 to 5 feet of the breach point.

d. Each clearing team member has a designated sector of fire unique to him initially and expands to overlap sectors of the other team members.

(1) The number 1 and number 2 men are initially concerned with the area directly to their front, then along the wall on either side of the door or entry point. This area is in their path of movement, and it is their primary sector of fire. Their alternate sector of fire is from the wall they are moving toward, back to the opposite far corner.

(2) The number 3 and number 4 men start at the center of the wall opposite their point of entry and clear to the left if moving toward the left, or to the right if moving toward the right. They stop short of their respective team member (either the number 1 man or the number 2 man).

e. The team members move toward their points of domination, engaging all targets in their sector. Team members must exercise fire control and discriminate between hostile and noncombatant room occupants. Shooting is done without stopping, using

Student Handout 3

Extracted Material from FM 6-22.5

This student handout contains 19 pages of extracted material from the following publication:

FM 6-22.5, Combat Stress, 23 Jun 2000

Chapter 4

Pages 57 thru 75

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

Chapter 4

Sleep Deprivation

4001. CHALLENGES OF SLEEP DEPRIVATION

People accumulate a “sleep debt” (cumulative loss of sleep over time) when they perform under limited sleep conditions. The only corrective measure for satisfying this sleep debt is sleep itself. Military operations, by their demanding nature, create situations where obtaining needed sleep will be difficult or impossible for more than short periods.

Continuous operations are military operations with many pulses of action every day and night, continuing for several days to weeks, which require careful planning and resource allocation to give everyone a minimum of 4 hours sleep in 24. (FM 22-51)

Sustained operations are continuous operations or combat with opportunity for less than 4 hours sleep per 24 hours for significant personnel, which may be brief or fragmented. (FM 22-51)

Accordingly, service members may have opportunities for only limited or fragmented sleep over an extended period. As a result of these periods of sleep loss, several combat tasks are likely to show decreased performance. These tasks include the following:

- 1 Orientation with friendly and enemy forces (knowledge of the squad's location and maintaining camouflage, cover, and concealment).

- | Coordination and information processing (coordinating firing with other vehicles and dismounted elements, reporting vehicle readiness, and communicating with the headquarters).
- | Combat activity (firing from bounding vehicle, checking the condition of weapons, observing the terrain for enemy presence).
- | Force preservation and regrouping (covering disengaging squads, marking the routes between locations, and conducting reconnaissance).
- | Command and control activity (directing location repositioning, directing mounted defense, assigning fire zones and targets).

Continuous operations will potentially be more commonplace on the battlefield. In offensive operations, darkness is the time to retain or gain the initiative; while in defensive operations, obstacles can be employed with greater security during darkness. Forces can disengage undetected and threats to close air support lessen. The physical environment changes at night. As the air cools below ground temperature, inversions reduce visibility and hamper radar and radio signals. Conditions are optimal for using chemical weapons. Visual changes also occur. Without the aid of white light, there is no color perception. There is also a decrease in visual clarity, field of view, and depth perception. Targets take longer to engage. Preparation time increases two-fold to six-fold. Simple actions, such as the departure and return of patrols, become more complex and dangerous. Nighttime planning and coordination require greater attention. Navigation, adjusting fire, and munitions and/or target matching are more difficult. Precision is essential, but accuracy has a price. Service members tend to maintain accuracy at the sacrifice of speed. The adverse conditions associated with or generated by continuous ground combat at night will degrade the fighting performance of Service members, teams, and units. The almost complete mechanization of

land combat forces and technological advances that permit effective movement at night, during poor weather conditions, and under conditions of limited visibility have largely overcome the reasons for “traditional” pauses in battle, such as darkness, resupply, and regrouping. New technologies have significantly increased the range, reduced the time, and changed the conditions over which battles are fought. For example, day/night-capable vehicles can operate for extended periods without re-supply, but they are limited by a crew’s need to sleep. A Service member is not a machine and is, therefore, the weak link in the chain. The equipment can operate longer than the Service member who operates it, as the Service member must have sleep.

Commanders and leaders must ensure that all Service members obtain enough rest to counteract the effects of rapidly shifting from daytime to nighttime duty hours, or to extended work schedules. Implementing countermeasures that are designed to help Service members adapt to continuous operations conditions can satisfy this requirement. Neither leaders nor their subordinates can perform without rest or sleep. The Service member, the unit, and the leader are all affected by continuous operations. Generally at night, the cognitive and physiological resources of Service members are not at their peak, especially after a rapid shift from daytime to nighttime duty hours. Fatigue, fear, feelings of isolation, and loss of confidence may increase.

Non-stop, unrelieved combat operations (sustained operations) with little or no sleep degrade performance and erode mental abilities more rapidly than physical strength and endurance. Information gained from the Army Unit Resiliency Analysis Model shows that even healthy young Service members who eat and drink properly experience a 25 percent loss in mental performance for each successive 24-hour period without sleep. The mental parameters include decisionmaking, reasoning, memory

tasks, and computational tasks. The loss may be greater for Service members who are older, less physically fit, or who do not eat and drink properly.

The effects of sustained operations are sometimes hidden and difficult to detect. Units are obviously impaired when Service members are killed or wounded in action or become noncombatant losses. They are further impaired when their troops are too tired to perform their tasks. Unlike individual performance, unit performance does not deteriorate gradually. Units fail catastrophically, with little warning.

A priority for fighting units is to assure that commanders and leaders are rested and able to think clearly. While this is obvious, it is a most difficult lesson for leaders to learn. During combat, commanders must focus on the human factor. They must assess and strengthen their units as they plan and fight battles. They must accurately decipher which units must lead, which must be replaced, where the effort must be reinforced, and where tenacity or audacity and subsequent success can be exploited. When leaders begin to fail, control and direction become ineffective, and the organization disintegrates. No fighting unit can endure when its primary objectives are no longer coordinated. Leaders must also prepare and precondition Service members to survive. It is particularly important that leaders conscientiously plan and implement effective sleep plans, because activities that are most dependent on reasoning, thinking, problem solving, and decision-making are those that suffer most when sleep and rest are neglected.

Some leaders wrongly believe that their round-the-clock presence during an operation is mandatory; they are unwilling to recognize that they, too, are subject to the effects of sleep deprivation. If the unit has been regularly trained according to the mission command philosophy, two benefits accrue. Not only will a leader be confident that in his absence his subordinates will adhere to his intent,

but the trust he shows in his subordinates will continue to maintain unit morale and help ease some of the stress of the situation.

In future operations, the battlefield will become increasingly lethal. The threat of nuclear, biological, and chemical weapons will maximize confusion, uncertainty, and stress, which adversely impact our ability to move, shoot, communicate, and sustain. Sleep loss in this type of environment increases an already stressful situation.

4002. EFFECTS OF SUSTAINED OPERATIONS ON PERFORMANCE

A basic rule for continuous operations is planning ahead to avoid sustained operations, and provide members 5 to 6 hours sleep in 24. However, missions or enemy actions sometimes require exceptional exertion for several days with only unpredictable, fragmented sleep—as required in sustained operations. Sustained combat leads to exhaustion and reduction in effective task performance. Even during the first night of combat, normal sleeping habits and routines are abnormal. The Service member feels the effects of fatigue and the pressure of stress from noise, disrupted sleep time, and threat to life. While essential for endurance, sheer determination cannot offset the mounting effects of adverse conditions. Cognitive degradation involving poor decisionmaking begins during and after the first 24 hours of sleep deprivation.

Individual and unit military effectiveness is dependent upon initiative, motivation, physical strength, endurance, and the ability to think clearly, accurately, and quickly. The longer a Service member goes without sleep, the more his thinking slows and becomes confused. Lapses in attention occur, and speed is sacrificed to maintain accuracy. Continuous work declines more rapidly than intermittent work.

Tasks such as requesting fire, integrating range cards, establishing positions, and coordinating squad tactics become more difficult than well-practiced, routine physical tasks, such as loading magazines and marching. Without sleep, Service members can perform the simpler and/or clearer tasks—lifting, digging, and marching—longer than the more complicated or ambiguous tasks such as a fine hand-eye coordination sequence; i.e., tracking a target through a scope.

Sleep loss affects memory, reasoning, mental assessments, decision-making, problem-solving, subsequent actions, and overall effectiveness. While comprehension is accurate, reading speed slows and recall fails. For example, Service members may understand orders when reading them in documents, yet they are forgotten later when required. Individuals will forget or omit assigned tasks more often than they will make errors in carrying them out.

Leaders can expect declining moods, motivation, initiative, planning ability, and preventive maintenance. High motivation will only increase risk, due to impaired performance. Leaders must recognize erratic or unreliable task performance in subordinates, as well as in themselves. Alertness and performance decline gradually with partial sleep deprivation; that is, when sleep is limited to 4 to 5 hours per night. After 5 to 7 days of partial sleep deprivation, alertness and performance decline to the same low levels as those following 2 days of total sleep deprivation. After 48 to 72 hours without sleep, personnel become militarily ineffective.

Adverse Conditions

Continuous combat forces Service members to perform under adverse conditions that cause degradation in performance. Examples of adverse conditions follow.

Low Light Level

The amount of light available for seeing landmarks, targets, and maps is greatly reduced at twilight and night.

Limited Visibility

Smoke, fog, rain, snow, ice, and glare degrade a Service member's ability to see his environment and objects within it, as opposed to situations free of such conditions.

Disrupted Sleep Routines

People are accustomed to being awake or asleep during certain hours of the day or night. Disruption of the normal sleeping schedule causes degraded performance.

Physical Fatigue

Working the muscles faster than they can be supplied with oxygen and fuel rapidly creates "oxygen debt," eventually making these muscles unable to function until the deficits are made up during brief rests.

Sleep Loss

The muscles can continue to function adequately without sleep, but the brain cannot. Increasing sleep debt leads to subtle, but potentially critical, performance failures.

Sleep Loss Indicators

Indications of degraded performance symptoms become more prevalent as sleep debt accumulates. Performance is affected by the hours of wakefulness, tolerance to sleep loss, and the types of mental or physical work. Both mental and physical changes occur, with symptoms varying among individuals. Leaders must observe Service members for the following indications of sleep loss and degraded performance:

- | Physical changes in appearance, including vacant stares, bloodshot eyes, pale skin, and poor personal hygiene. Other physical signs of sleep loss include the body swaying when standing, sudden dropping of the chin when sitting, occasional loss of hand-grip strength, walking into obstacles or ditches, low body temperature, slowed heart rate, and slurred speech.
- | Mood changes, decreased willingness to work, and diminished performance go hand-in-hand. Service members may experience decreasing levels of energy, alertness, interest in their surroundings, and cheerfulness with a concurrent increase in irritability, negativity, and sleepiness. Some become depressed and apathetic. Others, for a time, can become energized by sleep loss, talk more, and may be more assertive without necessarily maintaining good judgment. Sleepiness and mood changes are not signs of weakness. After long periods of sleep loss, Service members go from being irritable and negative to dull and weary.
- | Service members may feel more effort is needed to perform a physical task in the morning than in the afternoon. Exaggerated feelings of physical exertion may lead to work stoppage, especially between 0400 and 0700. During that time, the tendency to fall asleep is considerably more noticeable than other times.
- | Both bickering and irritability increase with sleep loss. When Service members argue, it shows that they are still talking to each other and exchanging orders and messages. When arguments cease, especially after a period of increased bickering, Service members may be in a state of mental exhaustion.
- | Comprehension and perception slow considerably. Individuals require extended time to understand oral, written or coded information; to find a location on a map and/or chart coordinates; to interpret changes in enemy fire patterns; and to make sense of things seen or heard, especially patterns. They may

have difficulty with spot status or damage reports, and may be unable to assess simple tactical situations.

Loss of Concentration

Sleep deprivation causes the attention span to shorten. There is a loss of concentration on the job as dream-like thoughts cause lapses in attention. Leaders should watch for the following:

- | Decreased vigilance. Personnel are less alert and fail to detect the appearance of targets, especially in monotonous environments. They may doze off at the wheel of moving vehicles.
- | Distorted attention. Service members may imagine seeing things that are not there, e.g., “moving” bushes when in reality there is no such movement. The sleep-deprived brain can also misperceive bushes, rocks, people, vehicles or anything else and see them as something different, in very precise detail. Often the tired brain “sees” what it wishes were there (food, a bed); at other times, these illusions may be animals or other more bizarre things. But when the mind is alert for an enemy, the brain may generate a very convincing, detailed image of the enemy. Sometimes, but not usually, sounds or other sensations may accompany these illusions. They usually last only seconds, but can persist for minutes if not challenged, and rarely have even been “seen” by equally sleep-deprived comrades when told of them. It is essential for sleep-deprived unit members to check out any questionable things they see with their comrades, and to faithfully follow reporting and challenge procedures.
- | Inability to concentrate; easily confused. Service members cannot keep their minds on what they are doing. They cannot follow multiple directions nor perform numerical calculations.

- | Failure to complete routine tasks. Sleep loss interferes with completing routine individual tasks, such as drying the feet, changing socks or filling canteens when water is available. Tasks such as performing weapons checks may be skipped.

When a Service member cannot recall what he just saw, read, heard or was told by another individual, he is exhibiting a common sign of sleep loss. His memory loss is limited to recent events. For example, a sleep-deprived Service member may forget recent target data elements or recall them incorrectly and have difficulty learning new information.

4003. ACHIEVING SLEEP IN COMBAT

Sleep deprivation produces stress and, therefore, sleep management is important. Sleep management is a combat multiplier. Planned sleep routines are important for keeping the unit, the individual Service members, and the leader himself functioning as required while reducing sleepiness during continuous combat. Since leaders are responsible for planning sleep routines, they need a basic understanding of the physiological and behavioral aspects of sleep and their impact on performance. The following paragraphs provide this information.

Rhythmic Variations

There are rhythmic variations in individual performance based on a predictable physiological and behavioral cycle that comprises about 24 hours. The 24-hour, day-night/work-rest cycle is called the *circadian rhythm*. Because traveling across a half-dozen time zones disrupts the usual relationship in the day-night/work-rest cycle, for a few days Service members are not sleepiest at their usual sleep period of 2400 to 0600, new-locale time. Allowing

sleep about 1200 to 1800, new-locale time, will only delay their adaptation to their new locale. Leaders must instruct troops to go to bed between 2400 and 0600 new-local time to establish a new circadian rhythm.

Another example of circadian rhythm is body temperature. Although one's "normal" temperature is 98.6 degrees, this is really an average or midpoint of a daily swing from 96.8 to 100.8 degrees. For someone accustomed to working days and sleeping nights, body temperature would fluctuate approximately as indicated. There is a well-established link between body temperature and sleepiness and/or performance slumps. Performance parallels body temperature. The higher the body temperature, the better the performance. As body temperature decreases, mood and motivation decline with a concurrent increase in sleepiness and fatigue.

Impact upon performance is most pronounced during the *circadian lull*, which is roughly 0200 to 0600 hours. During this time, performance declines about 10 to 15 percent. In sleep-deprived Service members, this decline may reach 35 to 40 percent. If the day-night/work-rest cycle is disrupted, performance suffers because the Service member is sleepy during the new work period and awake during the new sleep period. The body needs several days to adjust to the new schedule. Critical hours for sleep are between 0200 and 0600 when *anchor sleep* (the most beneficial sleep) is taken. The body is at its lowest temperature during this period. This is the best time for sleeping, but not for napping. To prevent sleep inertia, naps should always be taken at times other than the lowest point in body temperature.

Leaders need to calculate the difference in time zones and make the necessary schedule changes. Leaders will need day-and night-fighting teams. Members acclimated to working days and sleeping nights should be scheduled to work nights and sleep days.

Their performance slump/optimal time to sleep would be 2400 to 0600, new-locale time. Deployment, pre-combat, and combat are not usual circumstances. If certain Service members must have an offset circadian timing from the rest of the unit, a special effort must be made to establish their sleeping time. Obviously, troops must sleep whenever possible. If a planned sleep schedule cannot be followed, however, performance is enhanced if sleep coincides with the low point in body temperature.

Adjusting to new circadian rhythms is a slow process, taking 3 to 6 days to come “in phase” with a new schedule. Leaders should devise a sleep schedule that provides for sleep at the same time of day or night every 24 hours. Sleep schedules that provide for sleep at different times of day or night are less valuable and are detrimental to quality sleep and optimal performance.

Sleep Shifts

Staggered work schedules can be set up for two shifts working 4 hours on/4 hours off, 6 hours on/6 hours off, and 12 hours on/12 hours off. See Table 4-1. Each shift follows the same schedule daily. It is better to maintain regular shift schedules than schedules that continually change.

Sleep/Rest Guidelines

Leaders should use the following sleep and/or rest guidelines in this section to enhance individual and the unit performance in continuous operations.

- 1 Know personal tolerance for sleep loss and those under your command; major individual differences are not easily changed. Individuals who are unable to sleep during pre-deployment and deployment stages should be encouraged to practice relaxation exercises (see paragraph 2005).

Table 4-1. Sleep Shifts.

4 HOURS ON/4 HOURS OFF						
Shift	2400-0400	0400-0800	0800-1200	1200-1600	1600-2000	2000-2400
1	SLEEP	DUTY	SLEEP	DUTY	SLEEP	DUTY
2	DUTY	SLEEP	DUTY	SLEEP	DUTY	SLEEP
6 HOURS ON/6 HOURS OFF						
Shift	2400-0600	0600-1200	1200-1800	1800-2400		
1	SLEEP	DUTY	SLEEP	DUTY		
2	DUTY	SLEEP	DUTY	SLEEP		
12 HOURS ON/ 12 HOURS OFF						
Shift	2400-1200	1200-2400				
1	SLEEP	DUTY				
2	DUTY	SLEEP				

- i Ensure that Service members fully use their breaks and other opportunities for rest. Encourage them to waste no time in getting to sleep. Undisturbed, prolonged sleep is the most desirable use of rest opportunities. When there has been sleep loss but little physical exertion (e.g., manning communications, operating a radio), mild physical exercise such as walking around when conditions permit, can help maintain alertness.
- i Encourage Service members to sleep, not just rest, by creating the most conducive environment possible for sleep: quiet, without interruptions (or earplugs); dimness or darkness (or with eye cover); not overly warm or cold.

- 1 Do not allow personnel to sleep in unsafe conditions. Enforce strict rules designating sleep areas and requiring perimeter guards. Require day and night guides for all vehicles to prevent Service members from being accidentally run over.
- 1 Ensure that Service members follow sleep schedules or routines. The field commander who does not enforce a sleep schedule or routine leads his troops into an environment that increases the opportunity for hazardous conditions to be encountered while in continuous combat. Taking naps is not a sign of low fighting spirit or weakness; it is a sign of foresight.

Measuring Sleep Loss

Sleep loss can be measured by:

- 1 Keeping a sleep and/or activity log. From pre-deployment to post-deployment, log sleep and nap periods. Service members need 4 to 5 hours per 24-hour period; 6 or 7 hours is optimum. If they receive less, the first chance for a long rest period must be used for sleep.
- 1 Observing performance and asking questions. Look for the indications of sleep loss—such as increase in error occurrence, irritability, difficulty understanding information, and attention lapses—with concurrent decreases in initiative, short-term memory, and attention to personal hygiene. Confirm sleep loss by asking the obvious question: “When did you sleep last and how long did you sleep?”

Sleep Loss Alternatives

Ways to overcome performance degradation include:

- 1 Upon signs of diminished performance, find time for members to nap, change routines or rotate jobs (if cross-trained).

- | Have the Service members most affected by sleep loss execute a self-paced task.
- | Have Service members execute a task as a team, using the buddy system.
- | Do not allow Service members to be awakened for meals while in flight to a new location, especially if the time zone of the destination is several hours different than that of point of departure.
- | Insist that Service members empty their bladder before going to bed. Awakening to urinate interrupts sleep, and getting in and out of bed may disturb others and interrupt their sleep.
- | Allocate sleep by priority. Leaders, on whose decisions mission success and unit survival depend, must get the highest priority and largest allocation of sleep. Second priority is given to Service members that have guard duty and to those whose jobs require them to perform calculations, make judgments, sustain attention, evaluate information, and perform tasks that require a degree of precision and alertness.

4004. SLEEP/REST PLANNING

Sleep/rest planning applies to the pre-deployment, deployment, pre-combat, combat, and post-combat stages of battle.

Pre-Deployment Stage

Using mission-scenario operation guidelines, determine periods available for sleep and the total number of sleep hours possible. Because continuous operations requirements may change, alternate sleep routines should be planned. Become familiar with the area where the combat unit will sleep; For example, some may

have to sleep in mission-oriented protective posture (MOPP) IV. If sleeping in MOPP IV is anticipated in combat, practice it during the pre-deployment stage. Prior experience reduces stress, so practice anticipated sleep routines before continuous operations.

Deployment Stage

Since sleep will be reduced during deployment, follow pre-planned sleep routines. The prudent commander will choose a 4-hour on/4-hour off, 6-hour on/6-hour off, or 12-hour on/12-hour off shifts from the start. Take into account that Service members on night duty will need to sleep during the daytime. Provide night-shift personnel with separate sleeping quarters to avoid disruption of their sleep period.

Pre-Combat Stage

In general, people are most effective during the afternoon and are least effective just before dawn. Without prior adjustment to the new time zone, which naturally occurs in 3 to 5 days, leaders can expect degraded daytime performance. The reason is that 0200 to 0600 hours home-base time is the low point in performance efficiency and should be considered when planning workloads.

Combat Stage

Every effort should be made to avoid situations where all personnel are physically and mentally exhausted simultaneously. Make the most of any lull during the combat phase by sleeping briefly. Complete recovery from sleep loss may not be possible during intense combat, but limited sleep is helpful. Uninterrupted short sleeps of 15 minutes or longer are beneficial to partially recovering alertness. Sleep during the combat stage may be risky, how-

ever, because a Service member may wake up feeling groggy, confused, sluggish, and uncoordinated. It may take his brain from several seconds to 15 minutes to “warm up.” Individuals differ in how quickly they take to wake up, but it tends to be worse when the body expected to go into deep sleep, and to get worse with increasing sleep loss. Activities that increase circulation of warm blood to the brain, like moderate exercise or drinking a hot beverage, may shorten the start-up time.

Post-Combat Stage

It is important to make up sleep debt, but experts disagree about the amount of recovery time needed. Some say the hours of sleep needed for recovery after sleep deprivation are less than the amount lost. It is well known and documented that lost sleep is not made up hour-for-hour. Most experts agree that immediately following continuous combat, Service members should be allowed to sleep up to 10 hours. Longer sleep periods are not desirable because they cause “sleep drunkenness” and delay in getting back to a normal schedule. After the first sleep period of up to 10 hours, Service members should return to the regular sleep routine. Sleep inertia lasting longer than 5 to 15 minutes and increased sleepiness may occur for as long as a week following sustained combat. Some experts recommend that 4 of the first 8 hours of recovery sleep should be at the 0200 to 0600 sleep time, and they suggest the following guidelines for complete recovery from the effects of sleep loss:

- 1 12 hours for sleep and rest after 36 to 48 hours of complete sleep loss with light to moderate work load (fatigue may linger for 3 days).
- 1 24 hours for sleep and rest after 36 to 48 hours of sleep loss with high workload (12 to 16 hours per day).

- | 2 to 3 days time off after 72 hours or more of acute sleep loss.
- | As much as 5 days for sleep and rest following 96 hours or more of complete sleep loss.

Most experts agree that 10 hours of sleep is the maximum needed, with the additional 2 hours used for rest. It is doubtful that a Service member could continue past 72 hours of wakefulness. Should this occur, a couple of nights with 10 hours of sleep are more beneficial than an excess of 10 hours during one sleep period. If Service members have not slept for 36 to 48 hours or more, they should avoid sleep of less than 2 hours, especially between 0400 and 0600. A too-short sleep period at the wrong time may cause a long period of sleep inertia. After 96 hours of total wakefulness, 4 hours of sleep may provide substantial recovery for the simpler, less-vulnerable tasks. Recovery continues with additional days of 4 hours of sleep per 24 hours. Complex leadership tasks may require longer recovery sleep, but sleep until fully satisfied is not necessary.

Sleep loss alone does not cause permanent health problems, nor does it cause mentally healthy people to become mentally ill. Reduced sleep (from 8 to 4 hours) does not cause physical harm. Hallucinations may occur, but they disappear after recovery sleep. Clinical laboratory tests show that total sleep loss of over a week does not pose serious health problems. It is doubtful that Service members could stay awake for such an extended period, and it is not suggested that Service members try to endure long periods without rest. However, the effects of sleep loss, such as inattentiveness and poor judgment, may be harmful (such as falling asleep at the wheel of a vehicle).

Sleep cannot be stored in our bodies for emergency use. Sleep of more than 7 to 8 hours before deployment does not “store up”

excess sleep, but sleep taken immediately before a deployment can prolong activity. Therefore, it is important to begin continuous operations in a rested state. During daytime or early morning naps, many Service members experience vivid dreams as they fall asleep and often wake up frightened. Leaders should inform their troops that this occurrence is both common and normal during daytime sleep. If a single, unbroken period of 4 to 5 hours is not available for sleep, “power naps” of 15 to 30 minutes, although less recuperative, can be taken. Leaders must capitalize on every opportunity for a “power nap.” Merely resting by stretching out does not take the place of sleep. Only sleep can satisfy the need for sleep.

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 4

Extracted Material from FM 7-7

This student handout contains 8 pages of extracted material from the following publication:

FM 7-7, The Mechanized Infantry Platoon and Squad (APC), 15 Mar 1985

Appendix Q Pages Q-1 thru Q-8

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

APPENDIX Q

**TACTICAL ROAD MARCHES
AND ASSEMBLY AREAS****Section I. TACTICAL ROAD MARCHES****Q-1. GENERAL**

The ground movement of troops can be accomplished by administrative marches, tactical movements, and tactical marches.

Although administrative marches may break up unit integrity they are used in rear areas where speed and best use of transportation assets expedite movement.

Tactical movements, as described in chapter 4, are used when contact with enemy forces is a possibility.

Tactical marches are normally used to move units from rear areas to assembly areas in preparation for the conduct of a mission. Although a company may be required to conduct a tactical march, the platoon and company normally move as part of the battalion.

The tactical march is conducted when speed is essential, unit integrity must be maintained, road nets are available, and enemy contact is limited.

The following definitions apply to tactical road marches and foot marches:

ARRIVAL TIME. The time the head of a column reaches a designated point or line.

CLEARANCE TIME. The time the tail of a column passes a designated point or line.

COLUMN (TIME) GAP. The space between two consecutive ele-

ments calculated in units of length (meters) or units of time (minutes), measured from the rear of one element to the front of the following element.

COMPLETION TIME. The time the tail of a column passes the release point.

CRITICAL POINT. A selected point along the route of march used for reference in giving instructions; any point along the route where interference with the troop movement may occur.

MARCH UNIT. A unit that moves and halts at the command of a single commander — normally one of the smaller troop units such as a platoon or company.

PACE SETTER (VEHICLE). A vehicle in the lead element and responsible for regulating speed.

PASS TIME. The time between the movement of the first element past a given point and the movement of the last element past the same point.

RATE OF MARCH. The average kilometers-per-hour traveled.

CONTENTS		PAGE
Section I.	Tactical Road Marches	Q-1
II.	Assembly Areas	Q-6

RELEASE POINT. A well-defined point on a route at which the elements composing a column return to the authority of their respective commanders.

SERIAL. A grouping of march units under a single commander. It is usually a battalion, brigade, or larger unit. For convenience in planning, scheduling, and control, it is given a numerical or alphabetical designation.

START POINT. A well-defined point on a route where the elements of the move come under the control of the movement commander. It is at this point that the column is formed by the successive passing of each of the elements in the column.

VEHICLE DISTANCE. The space between two consecutive vehicles of an element in the column.

ORGANIZATION OF A MARCH COLUMN. Depending on the size and number of units conducting the move, the battalion is normally formed as a serial with companies and elements of headquarters and headquarters company formed into march units. The entire column is organized into an advance party, main body, and trail party. The advance party consists of a reconnaissance element and a quartering party the trail party is made up of maintenance, recovery, and medical elements; and the main body is made up of the rest of the force.

VEHICLE DISPERSION. The move can be conducted with vehicles traveling in close column, in open column, or by infiltration. Which method to use is determined by the degree of control required to maintain a cohe-

sive unit, and by the terrain that is being traveled — for example, open terrain requires more dispersion than close terrain.

In close column, vehicles are spaced approximately 25 meters apart during daylight. At night, and during reduced visibility vehicles are spaced so that the driver and TL can see the two lights in the blackout marker of the vehicle ahead, if not the vehicle itself. This method takes maximum advantage of traffic capacity of routes but provides little dispersion. Close column is normally used for marches during darkness, and under blackout conditions, and to move rapidly through urban areas to insure integrity and control of the column.

In open columns, the distance between vehicles is increased to provide greater dispersion. Vehicle distance varies from 50 to 100 meters. The increased distance provides greater protection against air and artillery fires, and ground attack by small enemy forces. It also allows the command vehicle and other vehicles not restricted by march orders to pass the column without disrupting its organization.

During a move by infiltration, vehicles are dispatched individually as small groups, or at irregular intervals at a rate that will keep traffic density down and prevent undue massing of vehicles. Infiltration provides the best possible defense against enemy observation and attack. It is suited for tactical road marches when enough time and road space are available and when maximum security, deception, and dispersion are desired.

When vehicles are farther apart than prescribed in open/closed column, they close up by traveling at a prescribed higher speed. This catch-up speed is normally fast enough to allow the column to close up over a long road distance, thus reducing the accordion effect produced by rapid changes in speed. A fixed catch-up

speed also provides an additional satiety factor for the march.

Q-2. CONDUCT OF THE TACTICAL ROAD MARCH

The movement order issued by the company commander includes information on the enemy and friendly situations, destination, route, rate-of-march, catch-up speed, order of march, start point, location and time, vehicle distances, release points, critical points, combat service support, communications, and location of the commander during the march. Many items of a movement order are SOP. Along with the order, the commander normally issues strip maps of the route. A strip map is a sketch of the route of march and contains as a minimum a start point, a release point, and critical points and distances between them. Strip maps should be issued to each squad leader or TL.

Before starting, each march unit has a designated team reconnoiter its route to the start point and determine the amount of time needed to reach it. The company also forms a quartering party element. It links up with the battalion quartering party before moving to the new assembly area. The company quartering party is normally headed by the executive officer or first sergeant and consists of representatives from platoons, company headquarters, and attached elements as necessary. The platoon sergeant and other designated persons may be assigned this duty. The battalion and company quartering parties move to the new assembly area before the main body moves. The quartering parties normally move by infiltration. Quartering party activities are a matter of SOP but should include:

Securing the new assembly area.

Searching for indications of enemy activity.

Looking for mines and booby traps.

Selecting routes to platoon locations.

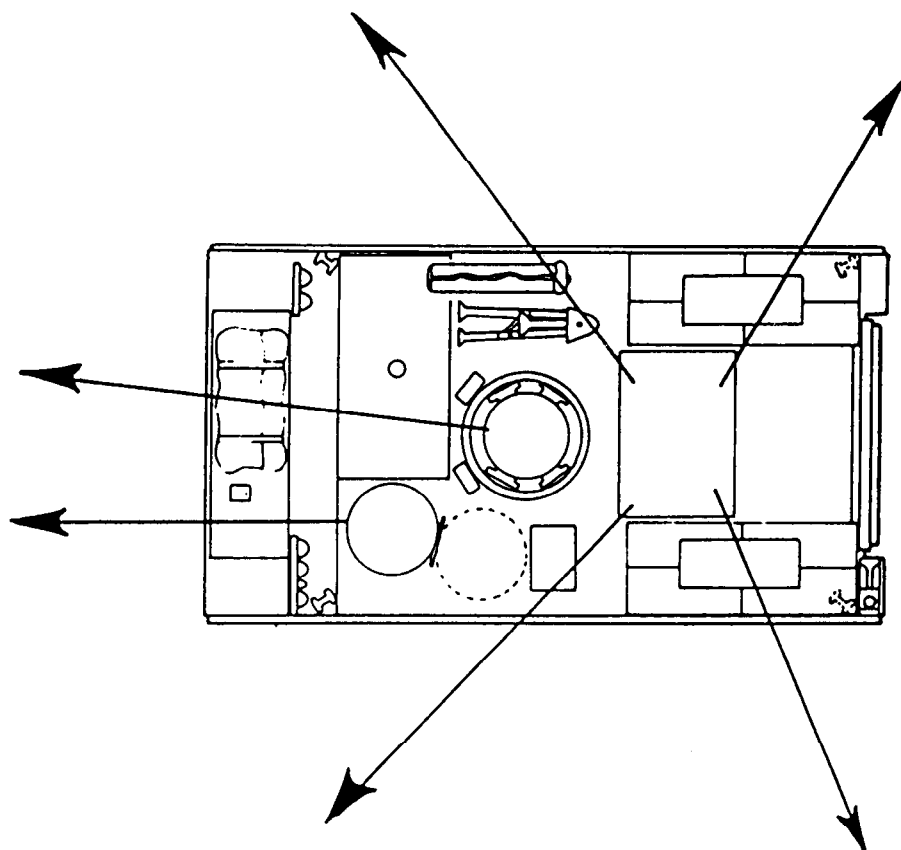
Selecting initial vehicle positions.**Selecting initial machine gun and Dragon positions.****Meeting platoons at the company release point and guiding vehicles into position.**

Although some movement and lining up may be required before starting the move to the start point, ideally vehicles move from their positions directly into their proper place in the march unit. The march unit should proceed to the start point

without stopping, arrive there on time, and pass through the start point at the proper speed and interval between vehicles.

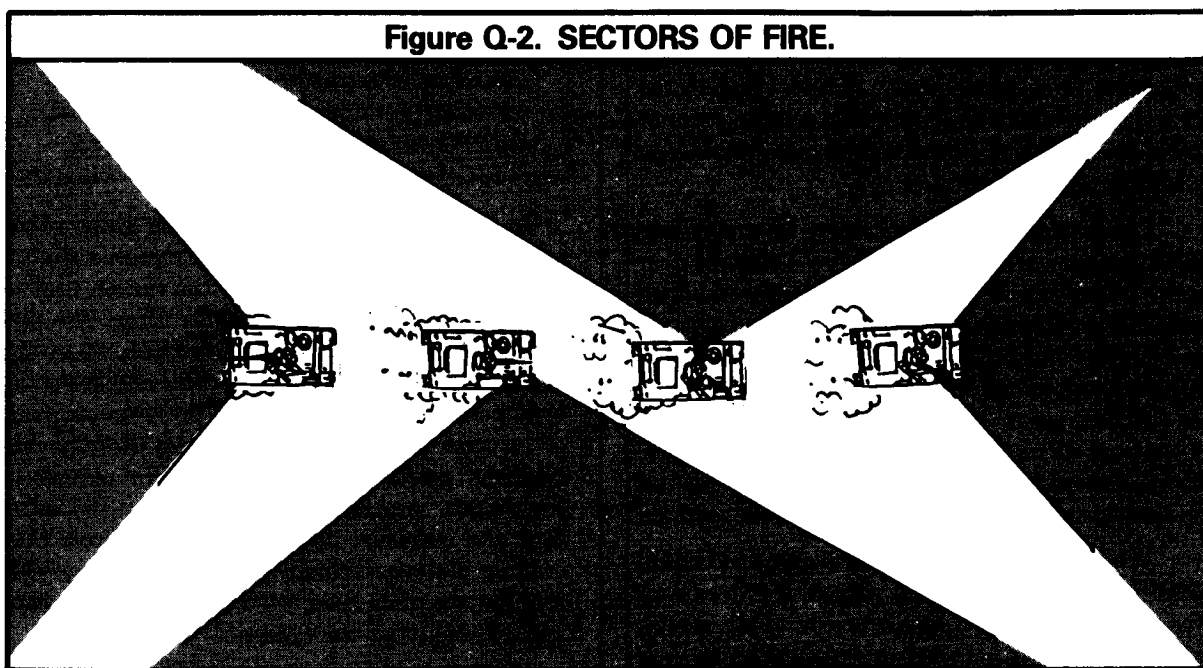
During the move, the crew of each carrier maintains 360-degree observation around the vehicle. The driver observes forward, the squad leader observes to the left of the caliber .50 machine gun, and the gunner observes to the right of the caliber .50 machine gun. Troops inside the cargo hatch observe to the left, right, and rear depending on their location.

Figure Q-1. SECTORS OF OBSERVATION.



Within the platoon column, each vehicle is assigned a sector of fire for the move. Each vehicle orients its caliber .50 machine gun and/or Dragon so that they can rapidly fire on targets within

their sector. The assignment of sectors of fire, coupled with the capability of firing from the cargo hatch, provides the platoon with 360-degree security while on the move.

Figure Q-2. SECTORS OF FIRE.

During the move, the platoon must be prepared to take action if attacked by enemy air, artillery, or ground forces. Passive measures against enemy air include:

Maintaining proper interval between vehicles.

Staggering vehicle positions within the column to avoid linear patterns.

Camouflaging vehicles.

Maintaining air observation.

If attacked by enemy air, vehicles in the column move from the axis of attack, either occupying covered and concealed positions or continuing to move, maintaining an evasive course. The unit also engages the aircraft with all available weapons.

If the column receives indirect fire during the move, button-up the vehicle, mask, and move rapidly out of the impact area. Masking is necessary because the enemy can use a mix of HE and chemical ammunition to disrupt movement and achieve maximum casualties. After the company team is through the impact area,

the march unit commander will start unmasking procedures.

If engaged by enemy ground forces while on a tactical road march, vehicles attempt to continue movement, or the platoon leader may elect to assault the enemy or fix the enemy for other forces to attack.

Because the primary mission of the unit is to move to a new location in preparation for future operations, additional actions against ground forces depend on the size of the enemy force and instructions from the company team/march unit commanders. If the enemy force consists of snipers or other disruptive forces equipped with small arms, the commander may pass through the force or dispatch a platoon to eliminate it. If the force is larger and presents a danger to the task force as a whole, fragmentary orders may be issued for march unit to leave the route of march, move to covered and concealed positions, and conduct a hasty attack as if conducting a movement to contact.

A march unit can conduct the kinds of halts: scheduled, unscheduled, and vehicle breakdown.

Scheduled halts are planned for maintenance and rest, or to comply with higher level time schedules. At scheduled halts, vehicles pull to the aids of the road but still maintain march distance between vehicles. Dismount teams dismount and establish local security.

Unscheduled halts are caused by unforeseen developments such as obstacles, ambushes, or other enemy activity forward of the platoon which prohibits further movement. If off-road movement is possible, the company team forms a coil for hasty perimeter defense. Platoons occupy a sector of the coil using the clock system. If off-road movement is not possible, the company team forms a herringbone. Dismount teams dismount in heavily wooded areas to improve local security.

When a vehicle becomes disabled and cannot continue the move, the TL directs the driver off the road, so as not to impede traffic. If the vehicle blocks the road, it is towed or pushed away to clear the road. Once the vehicle is clear of the road, the carrier team attempts to repair the vehicle while the dismount team establishes security provides guides, and directs traffic. The platoon to which the disabled vehicle belongs normally continues to move. If the crew gets the vehicle repaired and if the march unit has not passed completely the crew and vehicle rejoin the march unit at the tail end. If the march column has passed, or the crew could not repair the vehicle, the vehicle waits for the serial's trail party. The trail party repairs the vehicle or it tows the vehicle to the battalion assembly area (location of battalion trains). (On occasion, when fighting strength is critical, the platoon will crossload the disabled vehicle's dismount teams and squad leader.)

NOTE: If the platoon leader's carrier is disabled, the platoon leader moves to another vehicle. If space is available, the FO team should be crossloaded.

On arrival at the battalion RP, the leader of the company team's quartering party moves from a concealed position and guides the march unit to the company RP. Platoon guides direct the platoon's vehicle to their general locations, where the squad leaders (TLs) assume control and select vehicle positions. Vehicles should not stop on roads or in open fields, but should move directly into concealed positions. Normally the first platoon in the column is guided to positions farthest away from the entrance into the assembly area. Succeeding platoons should move as far as possible into the assembly area, with the last platoon closing and securing the entrance.

If the company team must move into an unprepared assembly area, the clock system can be used to rapidly establish a perimeter defense and road security. Normally direction of movement is 12 o'clock. The lead platoon usually takes up a third of the perimeter in the sector from 10 o'clock to 2 o'clock with succeeding platoons breaking off left and right, according to the company's SOP.

When movement into an assembly area is conducted at night, platoon guides must use easily recognizable visual signals to insure that the vehicles follow the proper guides. Use of different colored flashlight lenses is one method of identifying platoon guides.

Section II. ASSEMBLY AREAS

Q-3. GENERAL

An assembly area (AA) is occupied by a unit to prepare for future operations. The mechanized infantry platoon normally occupies a portion of the company team AA. The AA is on defensible ground. It should provide concealment, room for dispersion, and good internal routes, as well as

provide access to routes forward. Even though an AA is not expected to be a battle position, an all-round defense is organized with men and equipment positioned or dug into provide security from ground and air attack. The amount of preparation at an AA depends on the unit's intended stay

Leaders insure that personnel continue to improve positions until the unit moves.

Priority of work at an AA is normally a matter of SOP, but it may be part of the movement or operation order. Although commanders may have differing priorities, the following are normally included, in the order listed:

(1) Establish local security by dispatching OPs, which should have wire communications with the platoon and be equipped with the M8 chemical-agent alarm. At platoon positions, local security is further achieved by alternating troops from work to watching, thus keeping roughly half the force providing security.

(2) Position vehicles and crew-served weapons where they can best be employed. If Dragons cannot be employed because of terrain restrictions, they should not be dismounted.

(3) Establish communications within the platoon and to the company CP. The platoon sets up a hot loop, connecting the squads to the platoon leader's vehicle by telephone (TA1). To speed the establishment of telephone communications, the platoon leader can take a member of the platoon headquarters element with him to the company CP. As he returns to the platoon AA, a land telephone line can be reeled out from the company CP back to his vehicle. Also, the platoon leader has a person who knows where the company CP is should a messenger be needed. In the AA, radio use at platoon and squad level should be restricted to radio listening silence.

(4) Position remaining squad members. As in the defense, the remaining squad members are positioned to provide security for crew-served weapons, to cover dead space,

and to cover avenues of approach. Dismounted troops should prepare hasty fighting positions initially. The following is required:

Clear fields of fire.

Tie in fires between squads and platoons so that uncovered gaps do not exist in the defense.

Prepare range cards for vehicle-mounted weapons and dismounted crew-served weapons. Prepare a platoon sector sketch and forward a copy to the company CP.

Camouflage positions by using the appropriate camouflage screens for vehicles and natural material for infantry fighting positions.

(5) Once the basics are accomplished, alternate squad rest periods while working to improve the defense. Improve the defense by digging fighting positions and providing overhead cover, setting out remote sensors, and establishing security patrols.

Q-4. ACTIONS IN ASSEMBLY AREAS

Assembly areas provide the unit a secure defensible position where the unit can prepare for future operations. During and after the establishment of the defense, the following activities may take place:

Leaders receive and issue orders.

The unit maintains its equipment and weapons.

Personnel conduct personal hygiene.

Leaders inspect.

The unit is resupplied to include distribution of ammunition and refueling of vehicles.

The unit rehearses critical aspects of the upcoming operation.

Weapon systems are checked and small arms are test fired, if possible.

Troops eat and rest.

The unit continues to improve its defenses.

Student Handout 5

Extracted Material from FM 7-8

This student handout contains 36 pages of extracted material from the following publication:

FM 7-8, The Infantry Rifle Platoon and Squad, 22 Apr 1992, w/C1, 1 Mar 2001

Chapter 1	Pages 1-10 thru 1-20
Chapter 2	Pages 2-38 thru 2-70
Chapter 2	Pages 2-84 and 2-85

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

advance. FM 101-5-1 discusses these control measures in detail and provides examples of their use.

f. **Attacks During Limited Visibility.** Attacks during limited visibility achieve surprise, avoid heavy losses, cause panic in a weak and disorganized enemy, exploit success, maintain momentum, and keep pressure on the enemy. Platoons and squads attack whenever possible during limited visibility. Darkness, fog, heavy rain, falling snow, and the smoke and dust of combat create limited visibility conditions that allow infantry platoons and squads to move undetected.

(1) **Fundamentals.** The fundamentals for a daylight attack apply to limited visibility attacks. Limited visibility attacks require-

- Well-trained squads.
- Natural light sufficient to employ night vision devices.
- A simple concept with sufficient control measures.
- Detailed, successful reconnaissance of the objective, routes, passage points, support-by-fire positions, and other key locations.

(2) **Considerations** Leaders must consider the increased difficulty during limited visibility operations in performing the following:

- Controlling the movement of individuals and squads.
- Identifying targets and controlling direct and indirect fires.
- Navigating and moving.
- Identifying friendly and enemy soldiers.
- Locating, treating, and evacuating casualties.
- Locating and bypassing or breaching enemy obstacles.

1-8. DEFENSE

This paragraph describes the characteristics of defensive operations, the role of the commander's concept in focusing the efforts of platoons and squads in the defense, and other considerations for planning defensive operations. Defensive operations are characterized by preparation, disruption, concentration, and flexibility. Platoons and squads normally defend as part of a larger force to disrupt, disorganize, delay, or defeat an attacking enemy, deny an area to an enemy, or protect a flank. They may also defend as a part of a larger unit in a retrograde operation. The challenge to the defender is to retain the initiative, that is, to keep the enemy reacting and unable to execute his own plan.

a. **Initiative in the Defense.** Since the enemy decides the time and place of the attack, leaders seize and retain the initiative in the defense through careful planning, preparation, coordination, and rehearsal. Leaders plan and establish the defense to find the enemy first, without being found; fix the enemy with obstacles and fires; locate or create a

weakness in the enemy's attack plan; and maneuver to exploit that weakness with quick violent counterattack.

(1) **Plan and prepare.** Leaders use the troop-leading procedure to make sure that all necessary steps are taken to prepare for an operation. They analyze the factors of METT-T to determine the best course of action. In the defense, they determine where best to kill the enemy with fires. They position key weapons to concentrate fires into that area, tie in fires with obstacles, position the remaining platoon and squad weapons to support and protect the key weapons, and reconnoiter and rehearse counterattacks.

(2) **Find the enemy.** Platoon leaders find the enemy by knowing how he fights, by analyzing the terrain in light of this knowledge, by positioning OPs along likely avenues of approach, and by actively patrolling to locate him.

(3) **Avoid detection.** Platoons avoid detection by securing their defensive positions or sectors early and continuously, by positioning squads and weapons away from natural lines of drift or obvious terrain features, and by employing effective camouflage and noise and light discipline.

(4) **Fix the enemy.** Platoons use a combination of tactical obstacles and direct and indirect fires to disrupt the enemy attack and fix the enemy in a place where the platoon can destroy him with fires.

(5) **Find or create a weakness.** Platoons create a weakness by destroying the enemy's command and control nodes, by isolating an attacking or assaulting enemy formation from its support, by causing mounted forces to dismount and thereby slowing the attack and making the enemy vehicles more vulnerable, by use of night vision devices to gain a visibility advantage, or by the effective use of illumination to blind or expose the enemy during his attack.

(6) **Maneuver to exploit the weakness.** Having created a weakness, platoons must exploit it with counterattacks against the flank or rear of the enemy attack by fire or maneuver. Platoons must carefully coordinate and rehearse all counterattacks to ensure the proper synchronization in lifting and shifting of direct and indirect fires. They must also consider the threat of follow-on enemy forces against their counterattack.

(7) **Reorganize.** Platoons and squads must be able to reorganize quickly to continue the defense against follow-on forces.

b. Defense on a Reverse Slope. An infantry company or platoon can organize a defense on the reverse slope of a hill (Figure 1-1, page 1-12). This defense is on the part of the hill or ridge that is masked by the crest from enemy direct fire and ground observation. The platoon must control the crest by fire.

(1) The advantages of defending from a reverse slope are—

• Enemy ground observation of the position is masked.

• There is more freedom of movement in the position due to the enemy's lack of ground observation.

• Enemy direct-fire weapons cannot hit the position.

• Enemy indirect fire is less effective due to the lack of enemy ground observation.

• The defender gains surprise.

• If the enemy attacks over the crest, he will isolate himself from his supporting element(s).

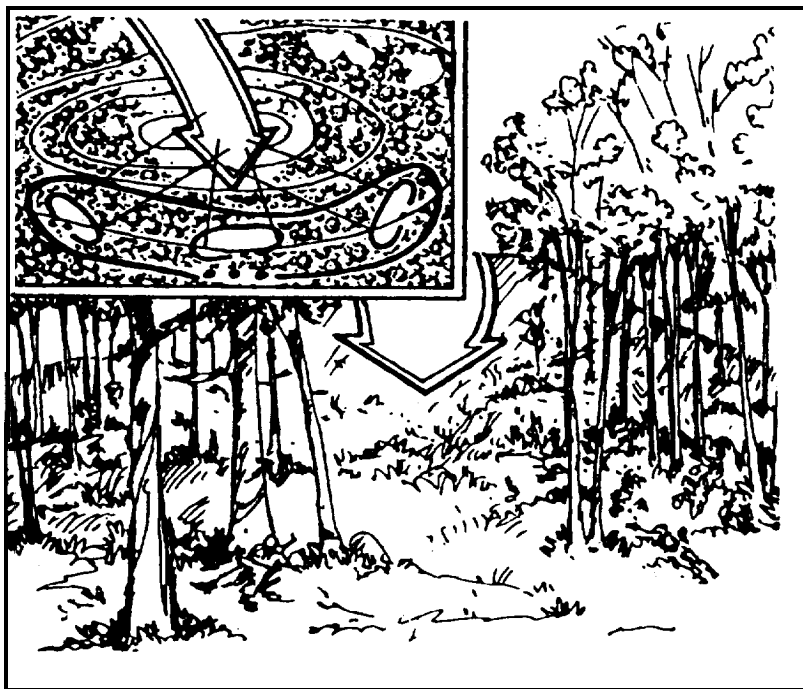


Figure 1-1. Defending from the reverse slope.

(2) The disadvantages of defending from a reverse slope may include the following:

• It is more difficult to observe the enemy. Soldiers can see no farther forward than the crest, making it difficult to determine just where the enemy is as he advances. This is especially true during limited visibility conditions. OPs must be placed well forward of the crest for early warning and long-range observation.

• Moving out of the position under pressure may be more difficult.

- Fields of fire are normally short. Grazing fire maybe less than 600 meters.

Ž Obstacles on the forward slope can only be covered with indirect fire or by units on the flanks-unless some weapons are initially placed forward.

Ž If the enemy gets to the crest, he can assault down the hill. This may give him a psychological advantage.

- If enough OPs are not put out or if they are not put in the right positions, the enemy may suddenly appear at close range without enough warning.

(3) The forward platoons are from 200 to 500 meters from the crest of the hills where they can have the best fields of fire and still have the advantages of the reverse slope.

(4) If it places them in supporting distance, the overmatching platoon is positioned on the forward slope of the next high ground to the rear (counterslope). Tasks assigned to the overmatching platoon include—

- Protect the flanks and rear of the forward positions.
- Reinforce the fires of the forward elements.

Ž Block penetrations of the forward positions.

Ž Cover the withdrawal of forward units.

- Counterattack.

(5) Platoon leaders plan indirect fire FPFs on or short of the crest of the hill to deny that area to the enemy and to help breakup his assault as he crosses the crest.

(6) Platoons position OPs on, or just forward of the crest to watch the entire platoon sector of fire. The OPs can vary in size from two soldiers to a squad reinforced with machine guns and antiarmor weapons.

(7) Leaders place obstacles below the crest of the hill on the friendly side. Tied in with an FPF, this can be effective in stopping or slowing an assault.

(8) The conduct of the defense from a reverse slope is the same as from a forward slope. However, the OPs forward of the position not only warn of the enemy's advance but also delay, deceive, and disorganize him by fire. OPs withdraw before they become engaged by the enemy. If machine guns are with the OPs, they withdraw first so they can occupy their primary fighting positions before the enemy reaches the crest. As the OPs withdraw, indirect fire is placed on the forward slope and on the crest of the hill to slow the enemy's advance. Soldiers in primary positions hold their fire until the enemy crosses the crest. As the enemy moves over the crest of the hill, the defenders hit him with all available fire.

(9) When the enemy assaults across the crest and is defeated, he will try to turn, bypass, or envelop the defense. To counter this, the overwatch element orients its fires to the flanks of the forward slope. Also, the defense must have appropriate supplementary positions and obstacles, as well as security elements, to warn if the enemy tries to envelop or bypass the position. Against armored, motorized, or road-bound attack, commanders and leaders should position antiarmor weapons and machine guns so their primary sectors are to the flanks of the reverse slope.

c. **Perimeter Defense.** The major advantage of the perimeter defense (Figure 1-2) is the preparedness of the platoon to defend against an attack from any direction. The main disadvantage is that combat power is not concentrated at first against an enemy avenue of approach. A perimeter defense differs from other defenses in that—

- The trace of the platoon is circular or triangular rather than linear.
 - Unoccupied areas between squads are smaller.
 - The flanks of the squads are bent back to conform to the plan.
 - The bulk of combat power is on the perimeter.
- The reserve is centrally located.

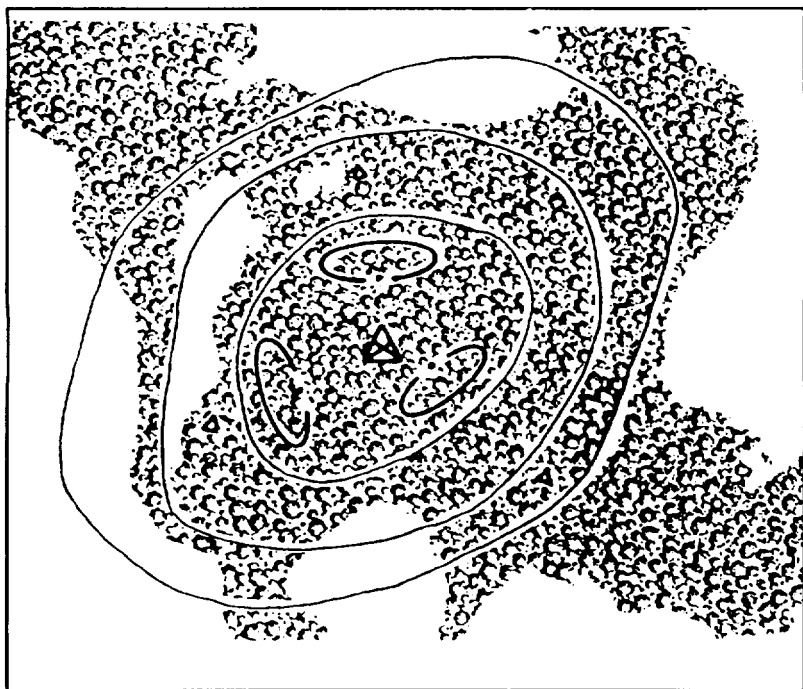


Figure 1-2. Perimeter defense.

d. **Defense in Sector.** Defense in sector maximizes the combat abilities of the infantry. It allows the platoon to fight throughout the depth of the sector using dispersed small-unit tactics.

(1) The platoon is usually assigned a sector within the company sector (Figure 1-3). The platoon leader may in turn assign sectors to individual squads to permit maximum freedom of action for the squad to defend. The platoon leader must remember that the squad has no way to call for fire support other than through the platoon net. FOs may be attached, or as a minimum leaders must be prepared to assist in calls for supporting fires.

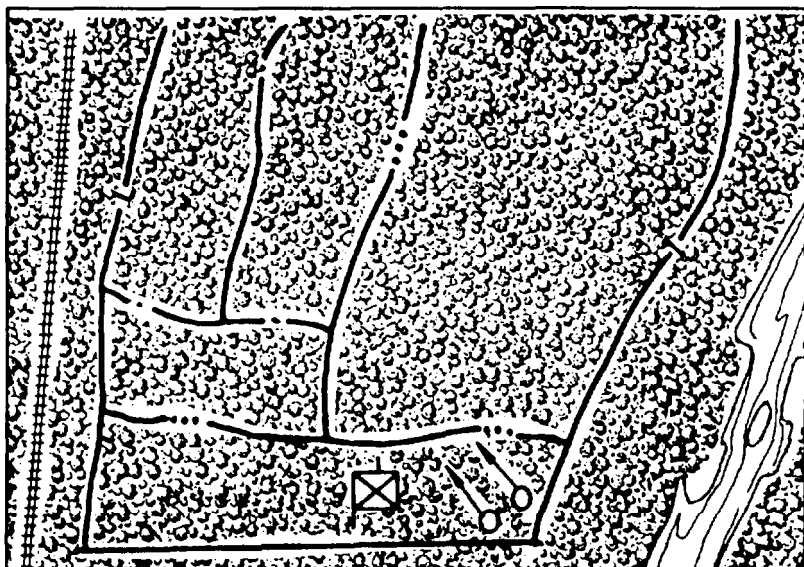


Figure 1-3 Assigned sectors.

(2) Each squad conducts detailed reconnaissance of its sector and identifies all likely enemy avenues of approach, choke points, kill zones, obstacles, patrol bases, and cache sites. They also identify all tentative positions.

(3) The platoon leader confirms the selected tentative sites and incorporates them into his concept (Figure 1-4, page 1-16). He designates initial positions and the sequence in which successive positions are to be occupied. He gives each squad specific guidance concerning contingency plans, rally points, and other coordinating instructions.

(4) Squads then prepare the defense in the sequence designated by the platoon leader. They initially prepare the primary position and then

a hasty supplementary position, and then they select the alternate position. Squads improve (he positions as time permits.

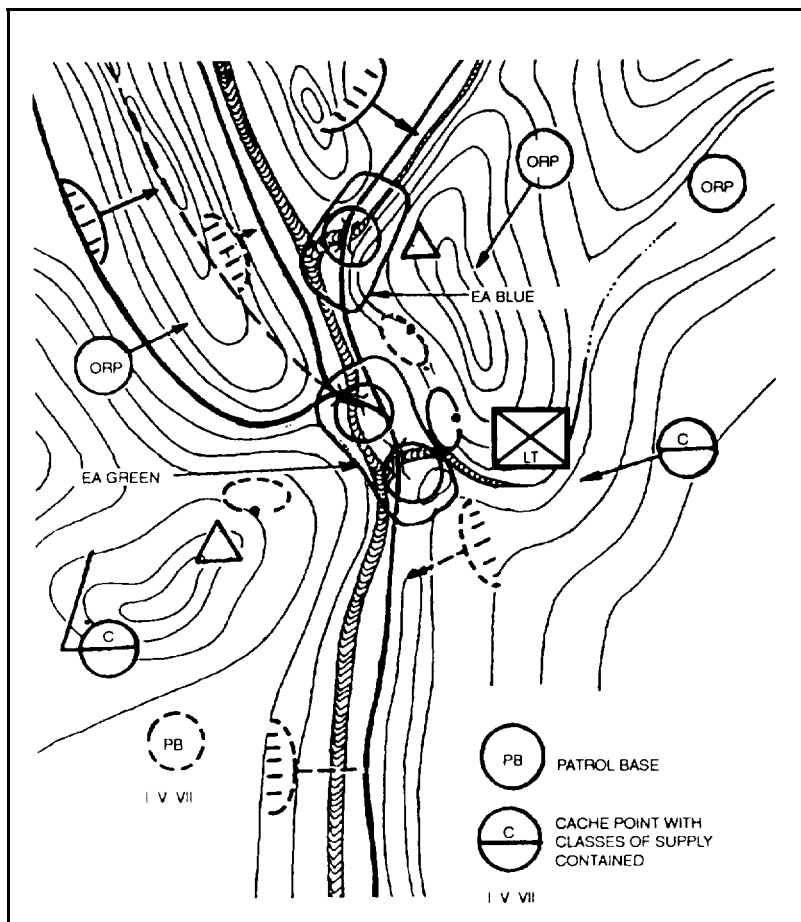


Figure 1-4. Concept of the operation for a defense in a sector.

(5) When Security warns of approaching enemy, the squad occupies its primary positions and prepares to engage the enemy. As the enemy moves into the choke point or kill zone, the squad initiates an ambush. It engages the enemy targets only as long as squads do not become decisively engaged. Squads then move to their next position and repeat the same process. The leader must plan the disengagement. Supporting positions, the use of smoke, and rehearsals are key to effective disengagements.

Depending on METT-T factors, the entire battle maybe fought this way. Some variations of this technique include the following:

(a) Allowing the enemy to exhaust himself reacting to numerous ambushes, then conduct a violent counterattack along previously rehearsed routes to complete the destruction of the enemy. The platoon leader can do (his by retaining direct control over a large portion of the platoon and committing it at the decisive moment. An alternative is to use prearranged signals to consolidate the platoon at a rally point; then to conduct the counterattack.

(b) Having the forward ambush teams hold their fire until the lead elements of the enemy formation hit another ambush deeper in the sector. Then ambush the the next enemy element as it passes through the kill zone. This technique destroys the cohesion of the enemy and is especially effective if the ambush eliminates the command group of the enemy unit.

(c) Planning indirect fires to cause more enemy casualties at ambush sites along a well-defined route.

(6) Casualty evacuation and resupply of ammunition and water are particularly difficult when defending this way.

e. Mutually Supporting Battle Positions. Platoons and squads use this technique to concentrate firepower into a given engagement area. This technique prevents the attacker from focusing on the entire defensive scheme.

(1) Leaders must ensure that the position is organized in depth, that all likely avenues of approach arc covered by fire, and that all positions have interlocking fires. Each position must be supported by another position that can deliver fires into the flank or rear of the enemy attacking it. Leaders must include obstacles in the fire plan to slow and stop the enemy in the engagement area-to include extensive use of mines. Squads patrol forward of the BP to provide security. They harass the enemy to disorganize and confuse him as to the location of the main defenses.

NOTE: Fighting positions are not located on likely avenues of approach.

(2) The positioning of squads, organization of the engagement area, and fire control measures arc critical to the succcss of this technique. Leaders position their squads in relation to the avenue of approach. Platoon leaders use essential control measures to mass fires against the enemy within their sectors.

(3) variations of this technique include—

- Opening fire at the some time and withdrawing on command.
- Opening fire one element at a time. As the enemy orients on each element firing at them and begins to maneuver

against it, other elements open fire and the original element withdraws once it is no longer receiving enemy fire. It either moves to a new position or to a rally point.

Ž Maneuvering to prevent the enemy from withdrawing or reinforcing.

- Designating more than one engagement area. Leaders use supplementary and on-order positions and secondary sectors of fire to mass fire into engagement areas as required.

f. **Control Measures.** Leaders use control measures to assign responsibilities, coordinate fires and maneuver, control combat operations, and clarify their concept of the operation. Additionally, control measures ensure the distribution of fires throughout the platoon's area of responsibility and the initial positioning and subsequent maneuver of squads.

(1) Graphic control measures used in the defense include sectors, battle positions, boundaries, contact points, coordination points, forward edge of the battle area (FEBA), strongpoints, target reference points (TRP), assembly areas, phase lines, passage points and lanes, release points, and engagement areas. FM 101- 5-1 discusses these control measures in detail and provides examples of their use.

(2) Fire commands and control measures for individual and key weapons also constitute a type of control measure available to leaders. Weapons control measures include range cards, sectors of fire, principle direction of fire, final protective line, final protective fires, and target reference points. Most of these appear on the range card. Chapter 2 describes the requirements for weapons range cards and provides examples. In addition, antiarmor gunners, machine gun [cures, fire teams, squads, and platoons can be given engagement priorities and fire commands.

g. **Obstacles.** Obstacles give strength to a defense when properly employed. Platoons and squads incorporate existing and reinforcing obstacles into their defense and construct other obstacles systems with mines and wire.

(1) **Considerations.** Leaders must integrate their obstacle plans with direct and indirect fire plans and with their scheme of maneuver. Platoons and squads always cover obstacles by fire and observation. They protect obstacles with antipersonnel mines, trip flares, and warning devices. They camouflage wire or hide it in natural terrain features. Chapter 2 discusses the techniques of obstacle employment most common to infantry platoons and squads.

(2) **Classification.** Wire obstacles have three classifications based on their use and location. Priority for emplacement normally goes to tactical

wire. Additionally, leaders can organize their obstacles so that one obstacle can serve both tactical and protective functions.

(a) *Tactical.* Platoons site tactical wire parallel to and along the friendly side of the FPLs of their major weapons. Tactical wire holds the enemy where he can be killed or wounded by automatic rifle fire, Claymores, hand grenades, and machine gun fire.

(b) *Protective.* Squads locate protective wire to prevent surprise assaults from points close to the defense area. It normally lies just outside of hand-grenade range and well within both day and night observation.

(c) *Supplementary.* Platoons and squads use supplementary wire to disguise the exact line of tactical wire and to give continuity to the company obstacle plan.

1-9. SECURITY

Security includes any measure taken by platoons and squads against actions that may reduce their effectiveness. It involves avoiding detection by the enemy or deceiving the enemy about friendly positions and intentions. It also includes finding the enemy and knowing as much about his positions and intentions as possible. Security allows units to retain freedom of action and is an important part of maintaining the initiative. The requirement for security is an inherent part of all platoon operations. Platoons and squads secure themselves when they move, attack, and defend. As part of a larger formation, they may undertake security operations that involve patrolling; establishing squad-sized OPs on a screen line; or executing advance, flank, or rear guard missions for the main body in a movement to contact.

a. **Security During Movement.** Platoons and squads enhance security during movement by—

- Using the proper movement formation and technique.
- Moving as fast as the situation will allow. This may degrade the enemy's ability to detect the platoon or squad and the effectiveness of his fires once detected.
- Moving along terrain that offers cover and concealment.
- Enforcing noise and light discipline.
- Using proper camouflage techniques.

b. **Security in the Offense.** Security in the offense includes reconnaissance and security missions to locate the enemy and protect friendly forces from surprise while leaving them free to deploy when contact is made with the enemy. All platoons and squads are responsible for their own local security. They may also be given specific reconnaissance and security tasks as part of the company or battalion plan. Platoons and squads conduct patrols, establish OPs, and move using appropriate

movement formations and techniques to accomplish both reconnaissance and security tasks.

c. **Security in the Defense.** In the defense, platoons and squads use both active and passive measures to enhance security. Platoons also add to their security by actions taken to deny enemy reconnaissance elements accurate information on friendly positions. This includes the destruction of enemy reconnaissance elements and the use of deception measures.

(1) Active measures include—

- The use of OPs and patrols.
- The establishment of specific levels of alert within the platoon. The level can be adjusted based on the METT-T situation.
- Establishment of stand-to times. The platoon's SOP should detail the platoon's activities for stand-to.

(2) Passive measures include camouflage; movement control; noise and light discipline; proper radiotelephone procedures; and ground sensors, night vision devices, and antiarmor weapons' day and nightsights.

2-10. MOVEMENT TECHNIQUES

A movement technique is the manner a platoon uses to traverse terrain. There are three movement techniques: traveling, traveling overwatch, and bounding overwatch. The selection of a movement technique is based on the likelihood of enemy contact and the need for speed. Factors to consider for each technique are control, dispersion, speed, and security (Figure 2-18). Movement techniques are not fixed formations. They refer to the distances between soldiers, teams, and squads that vary based on mission, enemy, terrain, visibility, and any other factor that affects control. Soldiers must be able to see their fire team leader. The squad leader must be able to see his fire team leaders. The platoon leader should be able to see his lead squad leader. Leaders control movement with arm-and-hand signals. They use radios only when needed. Any of the three movement techniques (traveling, traveling overwatch, bounding overwatch) can be used with any formation.

MOVEMENT TECHNIQUES	WHEN NORMALLY USED	CHARACTERISTICS			
		CONTROL	DISPERSION	SPEED	SECURITY
TRAVELING	CONTACT NOT LIKELY	MORE	LESS	FASTEST	LEAST
TRAVELING OVERWATCH	CONTACT POSSIBLE	LESS	MORE	SLOWER	MORE
BOUNDING OVERWATCH	CONTACT EXPECTED	MOST	MOST	SLOWEST	MOST

Figure 2-18. Movement techniques and characteristics.

a. **Techniques of Squad Movement.** The platoon leader determines and directs which movement technique the squad will use.

(1) **Traveling.** Traveling is used when contact with the enemy is not likely and speed is needed (Figure 2-19).

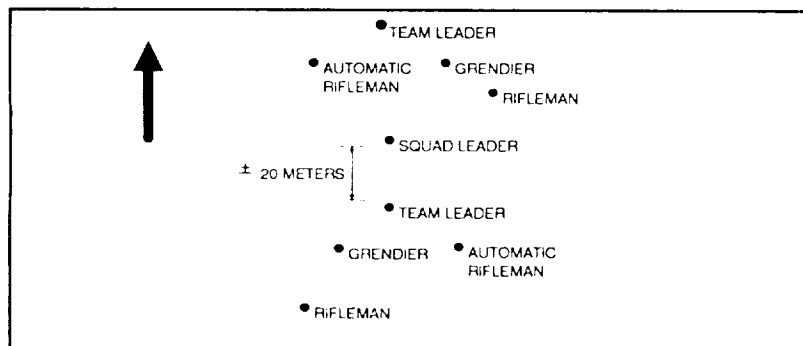


Figure 2-19. Squad traveling.

(2) **Traveling overwatch.** Traveling overwatch is used when contact is possible (Figure 2-20). Attached weapons move near the squad leader and under his control so he can employ them quickly.

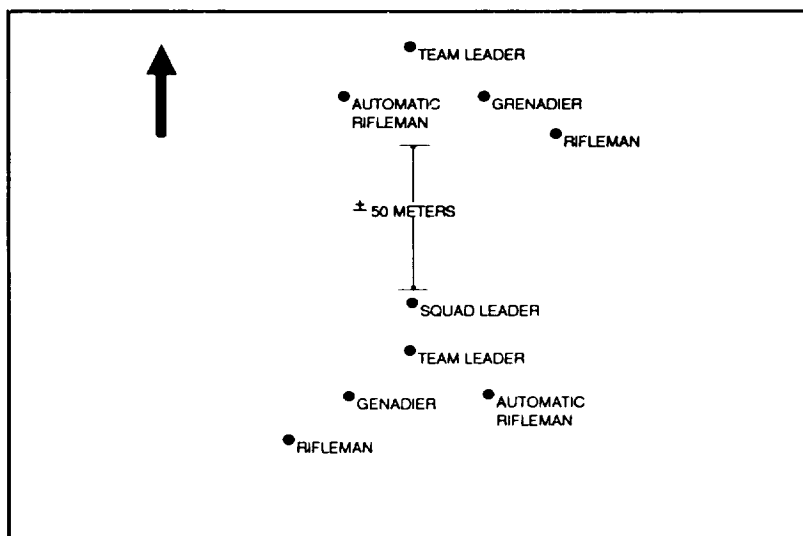


Figure 2-20. Squad traveling overwatch.

(3) **Bounding overwatch.** Bounding overwatch is used when contact is expected, when the squad leader feels the enemy is near (movement, noise, reflection, trash, fresh tracks, or even a hunch), or when a large open danger area must be crossed.

(a) The lead fire team overwatches first. Soldiers scan for enemy positions. The squad leader usually stays with the overwatch team. (Figure 2-21).

(b) The trail fire team bounds and signals the squad leader when his team completes its bound and is prepared to overwatch the movement of the other team.

(c) Both team leaders must know if successive or alternate bounds will be used and which team the squad leader will be with. The overwatching team leader must know the route and destination of the bounding team. The bounding team leader must know his team's destination and route, possible enemy locations, and actions to take when he arrives there. He must also know where the overwatching team will be, and how he will receive his instructions. The cover and concealment on the bounding team's route dictates how its soldiers move.

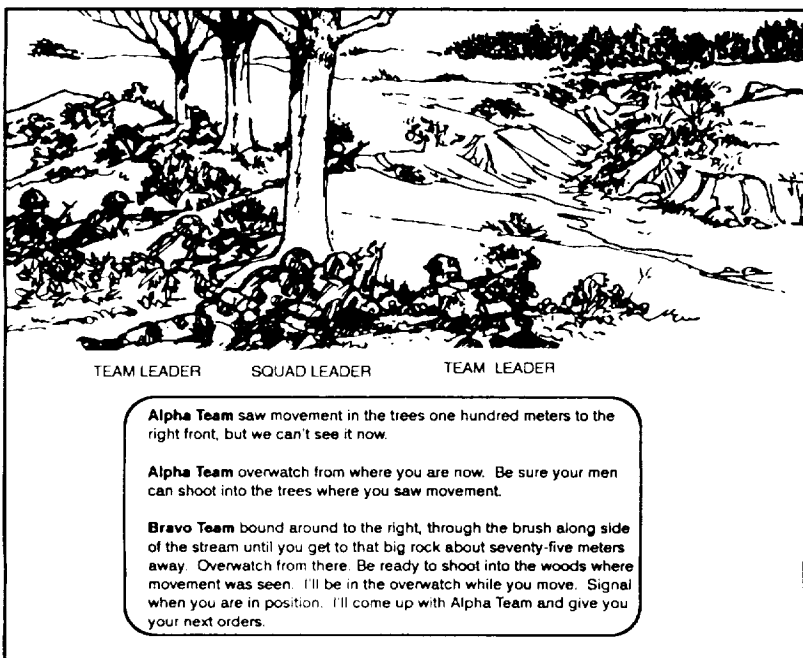


Figure 2-21. Example of squad leader's order to bound.

(d) Teams can bound successively or alternately. Successive bounds are easier to control; alternate bounds can be faster. (Figure 2-22.)

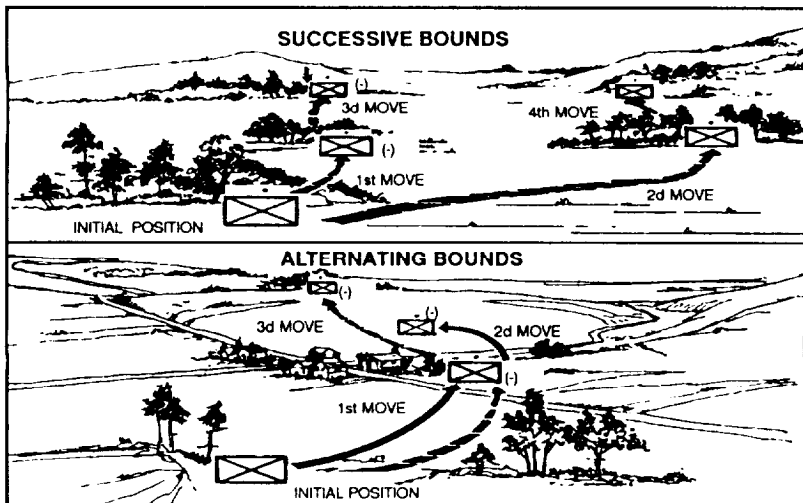


Figure 2-22. Squad successive and alternate bounds.

b. **Techniques of Platoon Movement.** The platoon leader determines and directs which movement technique the platoon will use.

(1) **Traveling.** Traveling is used when enemy contact is not likely and speed is needed (Figure 2-23).

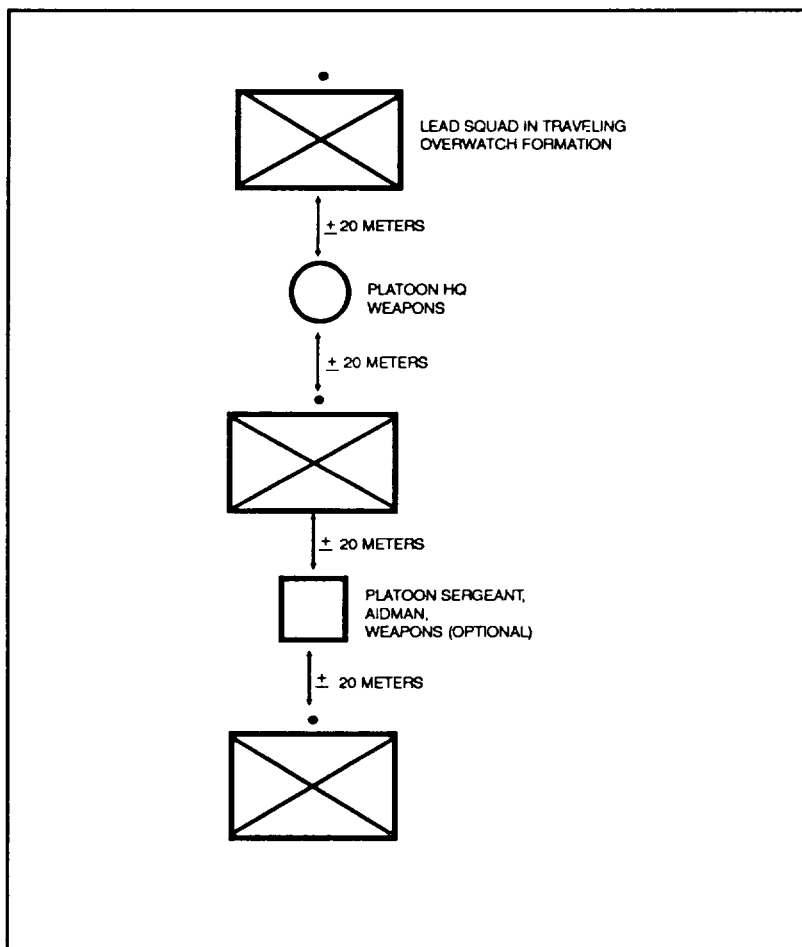


Figure 2-23. Platoon traveling.

(2) **Traveling overwatch.** Traveling overwatch is used when contact is possible but speed is needed (Figure 2-24). The platoon leader moves where he can best control the platoon. The platoon sergeant travels with the trailing squad, though he is free to move throughout the formation to

enforce security, noise and light discipline, and distances. between squads. The lead squad uses traveling overwatch, and the trailing squads use traveling.

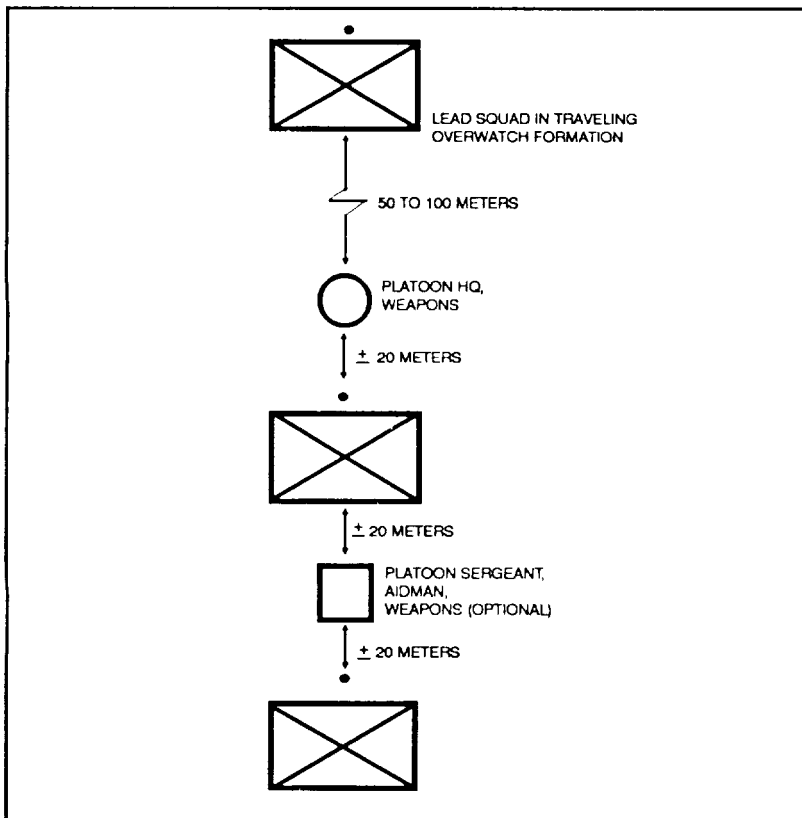


Figure 2-24. Platoon traveling overwatch.

(3) **Bounding overwatch.** Bounding overwatch is used when contact is expected (Figure 2-25). Platoons conduct bounding overwatch using successive or alternate bounds.

(a) **One squad bounding.** One squad bounds forward to a chosen position, then it becomes the overwatching element unless contact is made en route. The bounding squad can use either traveling overwatch, bounding overmatch, or individual movement techniques (low and high crawl, and short rushes by tire team or pairs).

(b) **One squad overwatching.** One squad overwatches the bounding squad from covered positions from which it can see and suppress likely enemy positions. Soldiers use sunning techniques to view their assigned

sector. The platoon leader remains with the overmatching squad. Normally, the platoon's machine guns are located with the overwatching squad also.

(c) *One squad awaiting orders.* One squad is uncommitted and ready for employment as directed by the platoon leader. The platoon sergeant and the leader of the squad awaiting orders position themselves close to the platoon leader.

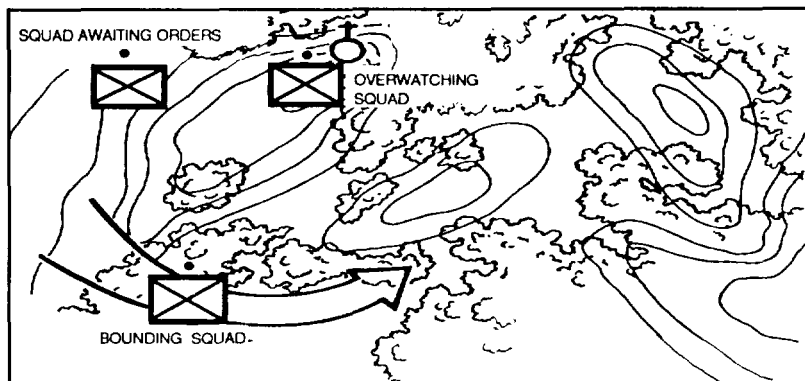


Figure 2-25. Platoon bounding overwatch

(d) *Considerations.* When deciding where to have his bounding squad go, a platoon leader considers—

- The requirements of the mission.
- Where the enemy is likely to be.
- The routes to the next overwatch position.
- The ability of an overwatching element's weapons to cover the bound.
- The responsiveness of the rest of the platoon.
- The fields of fire at the next overwatch position.

(e) *Instructions.* Before a bound, the platoon leader gives an order to his squad leaders from the overwatch position (Figure 2-26). He tells and shows them the following:

- The direction or location of the enemy (if known).
- The positions of the overwatching squad.
- The next overwatch position.
- The route of the bounding squad.
- What to do after the bounding squad reaches the next position.
- What signal the bounding squad will use to announce it is prepared to overwatch.
- How the squad will receive their next orders.

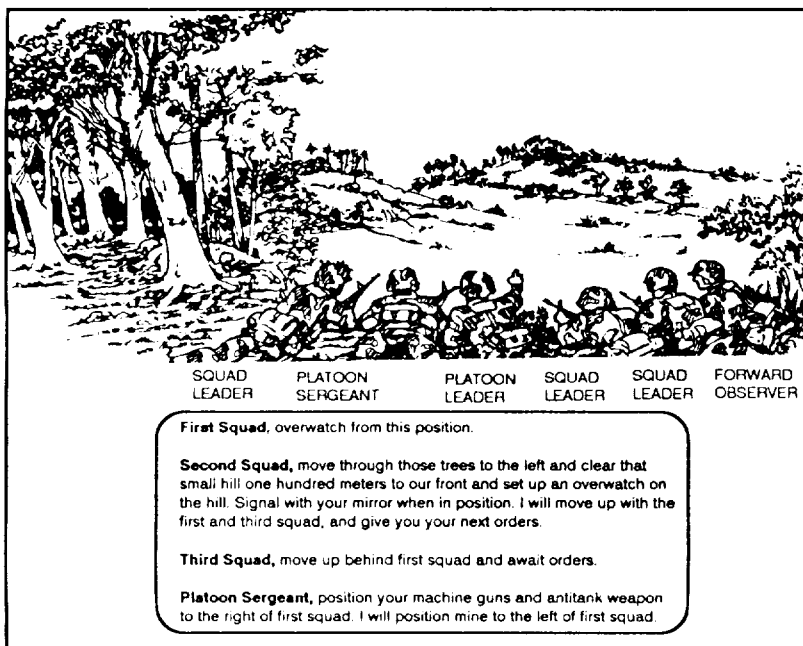


Figure 2-26. Example of platoon leader's order for bounding overwatch.

(f) *Machine guns.* The machine guns are normally employed in one of two ways:

- ✓ Attach both guns to the overwatch squad(s).
- ✓ One machine gun with the overwatch squad and the other with the bounding squad. This technique requires the guns to move between squads as they leave the overwatch to join the bounding squad.

c. **Individual Movement Techniques.** Individual movement techniques include the high and low crawl and short rushes (three to five seconds) from one covered position to another. (See FM 21-75.)

d. **Other Movement Situations.** The platoon can use other formations for movement.

(1) ***Movement with armored vehicles.*** For a detailed discussion of working with armored vehicles, see Section IX.

(2) ***Movement by water.*** The platoon avoids crossing water obstacles when possible. Leaders should identify weak or nonswimmers and pair them with a good swimmer in their squad.

(a) When platoons or squads must move into, through, or out of rivers, lakes, streams, or other bodies of water, they treat the water

obstacle as a danger area. While on the water, the platoon is exposed and vulnerable. To offset the disadvantages, the platoon—

- Ž Moves during limited visibility.
 - Ž Disperses.
 - Ž Camouflages thoroughly.
 - Ž Moves near the shore to reduce the chances of detection.
- (b) When moving in more than one boat, the platoon—
- Ž Maintains tactical integrity and self-sufficiency.
 - Ž Cross loads key soldiers and equipment.
 - Ž Makes sure that the radio is with the leader.

(c) If boats are not available, several other techniques can be used such as—

- Ž Swimming.
- Ž Poncho rafts.
- Ž Air mattresses.
- Ž Waterproof bags.
- Ž A 7/16-inch rope used as a semisubmersible one-rope bridge or safety line.
- Ž Water wings (made from a set of trousers).

(3) **Tactical marches.** Platoons conduct two types of tactical marches with the company. They are foot marches and motor marches.

(a) *Foot marches.* See FM 21-18.

(b) *Motor marches.* The platoon conducts motor marches like any other tactical movement. Special requirements may include—

- Ž Protection. Sandbagging the bottom of the truck to protect the soldiers from mines.
- Ž Observation. Removing bows and canvas to allow 360-degree observation and rapid dismount.
- Ž Inspection. Inspecting vehicle and driver to ensure they are ready. Checking fuel level and driver's knowledge of the route, speed, and distance between vehicles.
- Ž Loading. The platoon should load vehicles keeping fire team, squad, and platoon integrity. For example, fire teams and squads intact on the same vehicle and platoons in the same serial. Additionally, key leaders, weapons, and equipment should be cross loaded.
- Ž Rehearsals. Rehearsing immediate action to enemy contact (near and far ambush, air attack) ensuring the driver knows what to do.
- Ž Air guards. Posting air guards for each vehicle.

(4) **Movement during limited visibility conditions.** At night or when visibility is poor, a platoon must be able to function the same as during

day. It must be able to control, navigate, maintain security, move, and stalk at night or during limited visibility.

(a) *Control*. When visibility is poor, the following methods aid in control:

- Ž Selected personnel use of night vision devices.
- Ž Leaders move closer to the front.
- Ž The platoon reduces speed.
- Ž Each soldier uses two small strips of luminous tape on the rear of his helmet to allow the soldier behind him to see.
- Ž Leaders reduce the interval between soldiers and between units to make sure they can see each other.
- Ž Leaders conduct headcounts at regular intervals and after each halt to ensure personnel accountability.

(b) *Navigation*. To assist in navigation during limited visibility, leaders use—

- Ž Terrain association (general direction of travel coupled with recognition of prominent map and ground features).
- Ž Dead reckoning (compass direction and specific distances or legs). At the end of each leg, leaders should verify their location.
- Ž Movement routes that parallel identifiable terrain features.
- Ž Guides or marked routes.
- Ž GSRs to vector units to the proper location.
- Position-location devices.

(c) *Security*. For stealth and security in night moves, squads and platoons—

- Ž Designate a point man to maintain alertness, the lead team leader to navigate, and a pace man to count the distance traveled. Alternate compass and pace men are designated.
- Ž Allow no smoking, no lights, and no noise.
- Ž Use radio-listening silence.
- Ž Camouflage soldiers and equipment.
- Ž Use terrain to avoid detection by enemy surveillance or night vision devices.
- Ž Make frequent listening halts.
- Ž Mask the sounds of movement with artillery tires.

(d) *Night walking*. Proficiency in night walking is gained through practice. A soldier walking at night looks ahead, then slowly lifting his right foot, he cases it forward about 6 inches to the front of the left foot. While easing his foot forward and keeping his toes pointed downward, the soldier feels for twigs and trip wires. He slowly places his foot on the

ground. Confident of solid, quiet footing, the soldier slowly moves his weight forward, hesitates, then repeats the process with the other foot. This technique is slow and time-consuming.

(e) *Stalking*. Soldiers stalk to get as close as they can to an enemy sentry, patrol, or base. This is best described as a slow, crouching night walk. The soldier watches the enemy continuously. When close to the enemy, the soldier squints to help conceal light reflected by his eyes. He breathes slowly through his nose. If the enemy looks in his direction, the soldier freezes. He takes advantage of the background to blend with shadows and to prevent glare or contrast. Soldiers move during distractions such as gusts of wind, vehicle movement, loud talking, or nearby weapons fire.

2-11. ACTIONS AT DANGER AREAS

A danger area is any place on a route where the leader's estimate process tells him that his platoon might be exposed to enemy observation, fire, or both. Platoons try to avoid danger areas. If a platoon must cross a danger area, it does so with great caution and as quickly as possible.

a. **Types of Danger Areas.** The following are some examples of danger areas and crossing procedures.

(1) **Open areas.** Conceal the platoon on the nearside and observe the area. Post security to give early warning. Send an element across to clear the far side. When cleared, cross the remainder of the platoon at the shortest exposed distance and as quickly as possible.

(2) **Roads and trails.** Cross roads or trails at or near a bend, a narrow spot, or on low ground.

(3) **Villages.** Pass villages on the downwind side and well away from them. Avoid animals, especially dogs, which might reveal the presence of the platoon.

(4) **Enemy positions.** Pass on the downwind side (the enemy might have scout dogs). Be alert for trip wires and warning devices.

(5) **Minefields.** Bypass minefields if at all possible—even if it requires changing the route by a great distance. Clear a path through minefields only if necessary.

(6) **Streams.** Select a narrow spot in the stream that offers concealment on both banks. Observe the far side carefully. Emplace near and far-side security for early warning. Clear the far side, then cross rapidly but quietly.

(7) **Wire obstacles.** Avoid wire obstacles (the enemy covers obstacles with observation and fire).

b. Crossing of Danger Areas. When the platoon crosses a danger area independently or as the lead element of a larger force, it must—

 ✓ Designate near- and far-side rally points.

 ✓ Secure the near side (right, left flanks, and rear security).

 ✓ Reconnoiter and secure the far side.

 ✓ Execute crossing the danger area.

(1) The platoon leader or squad leader decides how the unit will cross based on the time he has, the size of the unit, the size of the danger area, the fields of fire into the area, and the amount of security he can post. A small unit may cross all at once, in buddy teams, or one soldier at a time. A large unit normally crosses its elements one at a time. As each element crosses, it moves to an overwatch position or to the far-side rally point until told to continue movement.

(2) To maintain momentum, mailing platoons normally cross the danger area without conducting their own reconnaissance or establishing far-side security. The lead platoon conducts reconnaissance and maintains far-side security for the whole force.

NOTE: The secured area must be large enough to allow the full deployment of the remainder of the unit.

c. Crossing of linear Danger Areas (Platoon). The platoon crosses the danger area in the formation and location specified by the platoon leader. On the far side of the danger area, platoon personnel and equipment are accounted for. The platoon continues the mission. (Figure 2-27.)

(1) When the lead team signals "danger area" (relayed throughout the platoon), the platoon halts.

(2) The platoon leader moves forward, confirms the danger area, and determines what technique the platoon will use to cross. The platoon sergeant also moves forward to the platoon leader.

(3) The platoon leader informs all squad leaders of the situation and the near-side and far-side rally points.

(4) The platoon sergeant directs positioning of the near-side security (usually conducted by the trail squad). These two security teams may follow him forward when the platoon halts and a danger area signal is passed back.

(5) The platoon leader reconnoiters the danger area and selects the crossing point that provides the best cover and concealment.

(6) Near-side security observes to the flanks and overmatches the crossing.

(7) When the near-side security is in place, the platoon leader directs the far-side security team to cross the danger area.

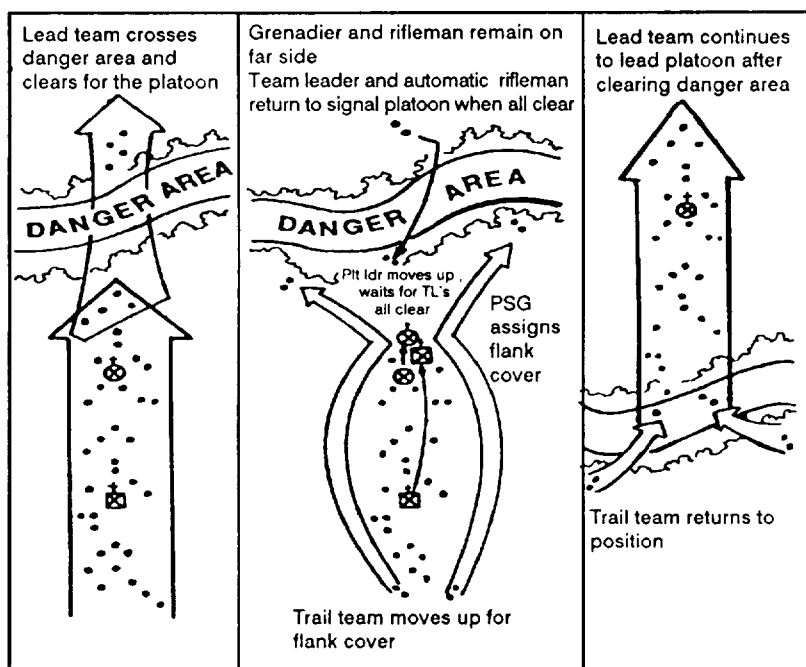


Figure 2-27. Crossing a danger area.

- (8) The far-side security team clears the far side.
- (9) The far-side security team leader establishes an OP forward of the cleared area.
- (10) The far-side security team signals to the squad leader that the area is clear. The squad leader relays the message to the platoon leader.
- (11) The platoon leader selects the method the platoon will use to cross the danger area.
- (12) The platoon quickly and quietly crosses the danger area.
- (13) Once across the danger area, the main body begins moving slowly on the required azimuth.
- (14) The near-side security element, controlled by the platoon sergeant, crosses the danger area where the platoon crossed. They may attempt to cover any tracks left by the platoon.
- (15) The platoon sergeant ensures everyone crosses and sends up the report.
- (16) The platoon leader ensures accountability and resumes movement at normal speed.

NOTE: The same principles stated above are used when crossing a smaller unit across a danger area.

d. **Crossing of Large Open Areas.** This is an area so large (hat the platoon cannot bypass due to the time to accomplish the mission (Figure 2- 28). A combination of (raveling overwatch and bounding overwatch is used to cross the open area. The traveling overwatch technique is used to save time. At any point in the open area where contact may be expected or once the squad or platoon comes within range of small-arms fire of the far side (about 250 meters), the squad or platoon moves using the bounding overwatch technique. Once beyond the open area, the squad or platoon reforms and continues the mission.

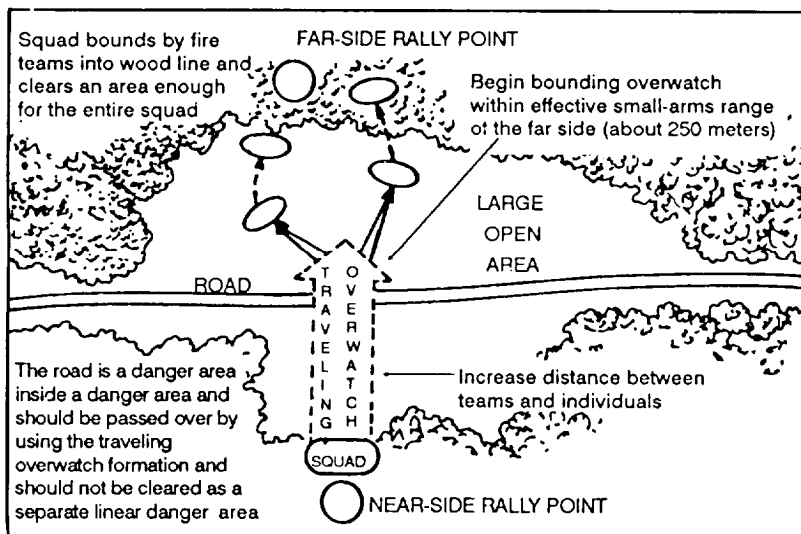


Figure 2-28. Crossing large open area.

e. **Crossing of Small Open Areas.** This is an open area small enough so that it may be bypassed in the time allowed for the mission. Two techniques can be used:

(1) **Detour bypass method.** By the use of 90-degree turns to the right or left, the squad or platoon moves around the open area until the far side is reached, then continues the mission. The pace count of the offset and return legs is not added to the distance of the planned route.

(2) **Contouring around the open area.** The leader designates a rally point on the far side with the movement azimuth, decides which side of the open area to contour around (after considering the distance, terrain, cover and concealment), and moves around the open area. He uses the wood line and vegetation for cover and concealment. When the squad or platoon arrives at the rally point on the far side, the leader reassumes the azimuth to the objective area and continues the mission (Figure 2-29).

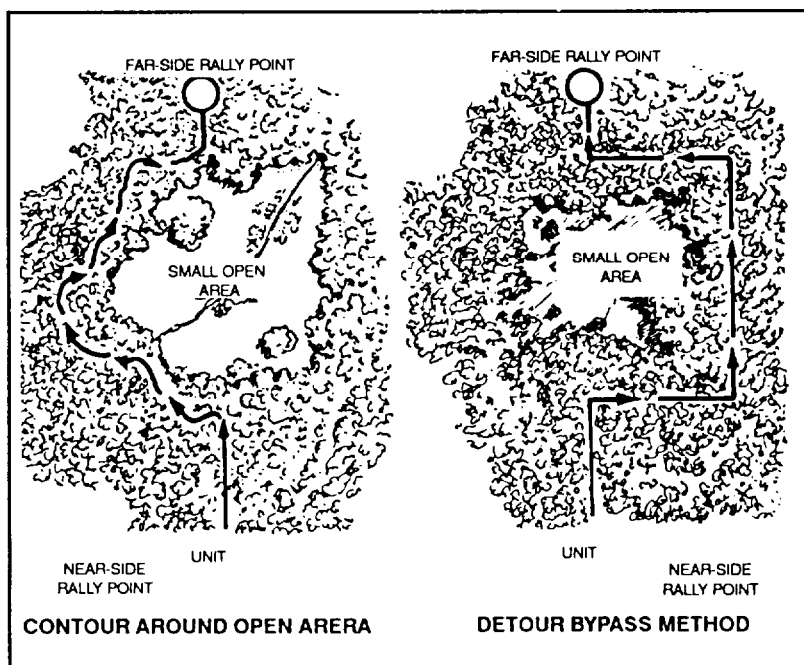


Figure 2-29. Crossing a small open area.

f. **Enemy Contact at Danger Areas.** If the platoon makes enemy contact in or around the danger area, see Figure 2-30 for contact on far side, Figure 2-31 for contact on a road or trail, or Figure 2-32 for contact on near side.

NOTE: Squads react to contact the same as platoons.

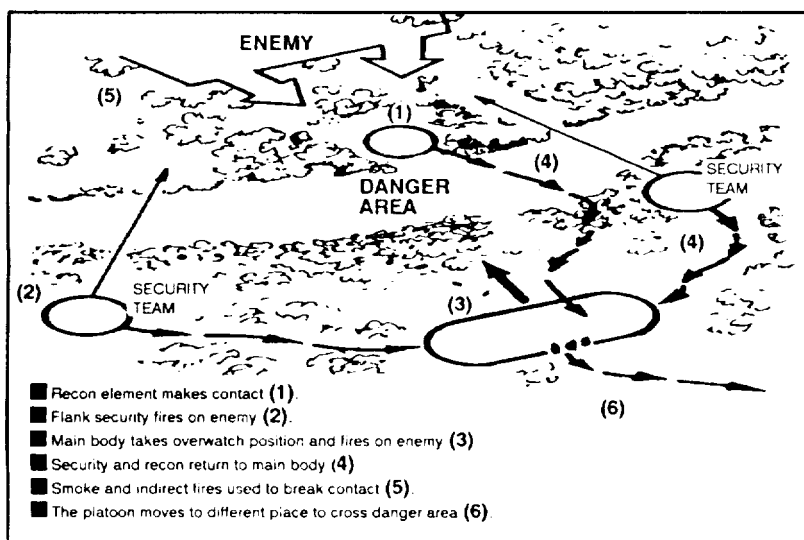


Figure 2-30. Enemy contact on far side.

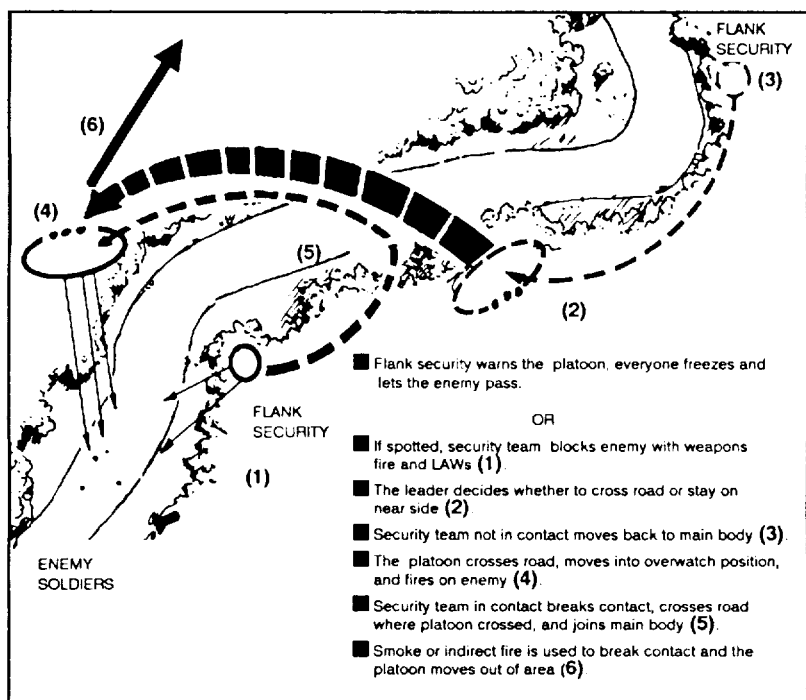


Figure 2-31. Enemy contact on road or trail.

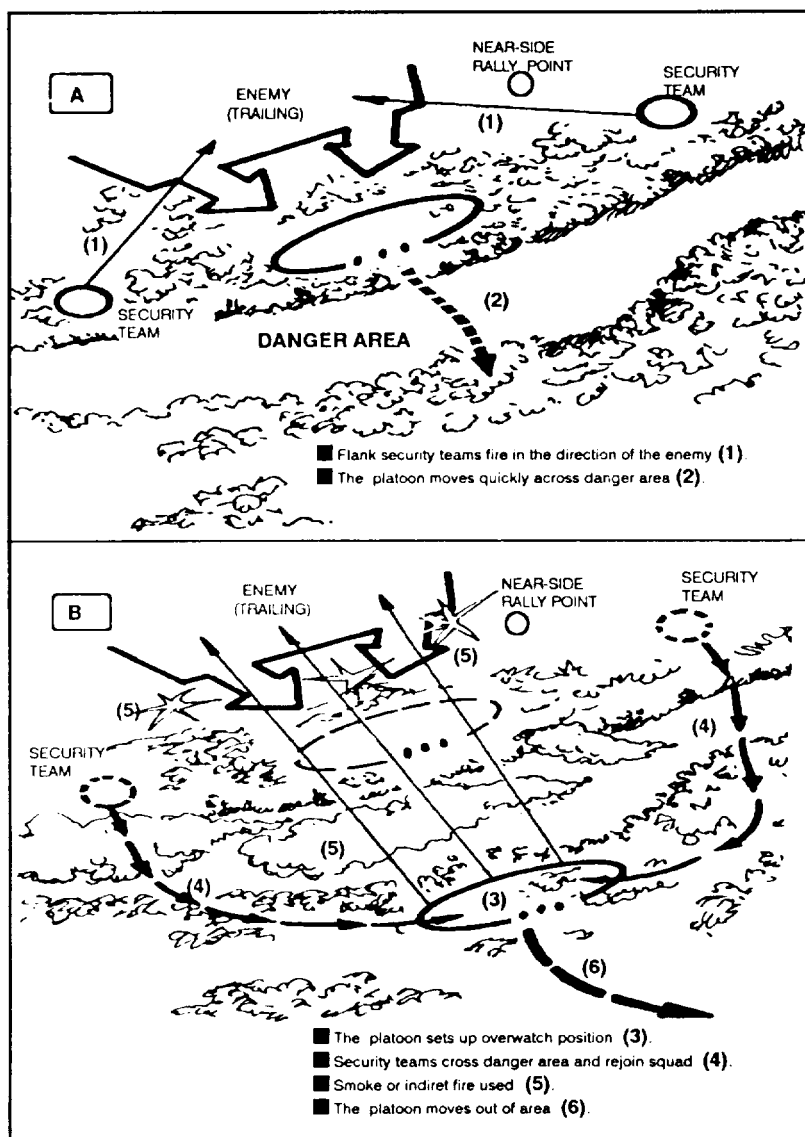


Figure 2-32. Enemy contact on near side.

Section IV. OFFENSE

This section provides techniques and procedures for offensive missions. It includes movement to contact, deliberate attack, and consolidation and reorganization on the objective.

2-12. MOVEMENT TO CONTACT

Infantry units use two techniques for conducting a movement to contact—search and attack or approach march. The platoon leader selects the technique based on the expected enemy situation. Search and attack is used when the enemy is dispersed, when the enemy is expected to avoid contact or quickly disengage and withdraw, or to deny him movement in an area. The approach march maybe used when the enemy is expected to deploy using relatively fixed offensive or defensive formations.

a. **Search and Attack Technique.** The search and attack technique involves the use of multiple squads and fire teams coordinating their actions to make contact with the enemy. Platoons attempt to find the enemy, and then fix and finish him. They combine patrolling techniques with the requirement to conduct hasty or deliberate attacks once the enemy has been found. Planning considerations include—

- Ž The factors of METT-T.
- Ž The requirement for decentralized execution. (The platoon leader coordinates the actions of squads.)
- Ž The requirement for mutual support. (The platoon leader must be able to respond to contact with his other squads not in contact.)
- Ž The length of operations. (The plan may need to address continuous operations.)
- Ž The soldier's load. (Search and attack requires stealth.)
- Ž Resupply and MEDEVAC.
- Ž The positioning of key leaders and personnel.
- Ž The employment of key weapons.
- Ž The requirement for patrol bases.
- Ž The concept for entering the zone of action.
- Ž The concept for linkups. (All leaders must know how they will linkup once contact is made.)

b. **Approach March Technique.** The concept behind the approach march is to make contact with the smallest element, allowing the commander the flexibility of maneuvering or bypassing the enemy force. As part of a larger unit using the approach march technique, platoons may act as the advance, flank, or rear guard. They may also receive on-order missions as part of the main body.

(1) *Advance guard.* As the advance guard, the platoon finds the enemy and locates gaps, flanks, and weaknesses in his defense. The advance guard attempts to make contact on ground of its own choosing, to gain the advantage of surprise, and to develop the situation (either fight through or support the assault of all or part of the main body). The advance guard operates within the range of the main body's indirect fire support weapons.

(a) One rifle squad leads the advance guard.

(b) The platoon uses appropriate formations and movement techniques. (See Figure 2-33.)

(c) The leader rotates the lead squad as necessary to keep soldier fresh.

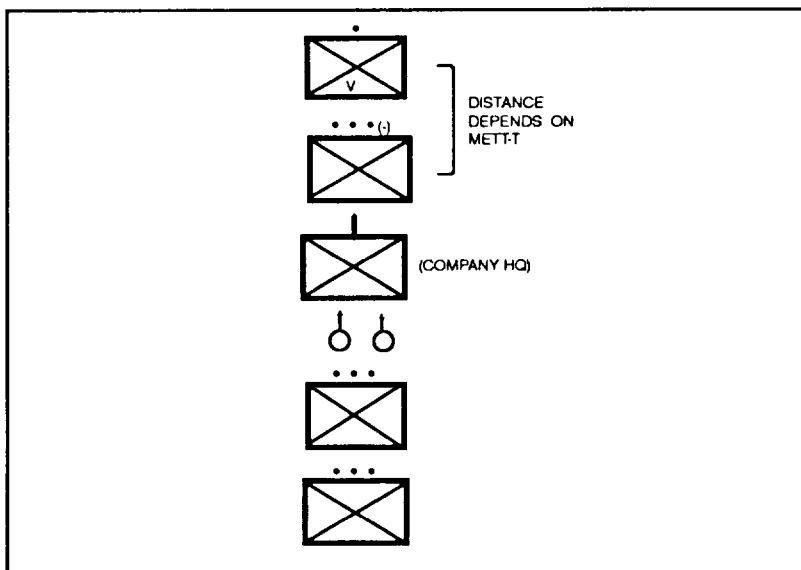


Figure 2-33. Lead element, using traveling overwatch.

(2) *Flank or rear guard.* The entire platoon may act as the flank or rear guard for a battalion conducting a movement to contact using this technique. The platoon—

- ~ Moves using the appropriate formation and movement technique. It must maintain the same momentum as the main body.
- ~ Provides early warning.
- ~ Destroys enemy reconnaissance units.
- ~ Prevents direct fires or observation of the main body.

(3) **Main body.** When moving as part of the main body, platoons may be tasked to assault, bypass, or fix an enemy force; or seize, secure, or clear an assigned area. The platoon may also be detailed to provide squads as flank guards, stay-behind ambushes, rear security, or additional security on the front. These squads may come under the direct control of the company commander. Platoons and squads use appropriate formations and movement techniques, assault techniques, and ambush techniques.

2-13. DELIBERATE ATTACK

Platoons and squads conduct deliberate attacks as part of a larger force.

a. **Planning Considerations.** The leader uses the troop-leading procedure and the estimate of the situation to develop his plan (see Section I).

(1) The platoon can expect to be a base-of-fire element or an assault element. If the platoon receives the mission to conduct a supporting attack for the company, or to attack a separate objective, the platoon leader should constitute a base-of-fire element and an assault element. The platoon leader's decision to employ his squads depends on the ability to achieve suppressive fires against the objective, the need for firepower in the assault, and the requirement for a reserve to retain the freedom to maneuver. If the platoon is the company main effort, the platoon leader can retain less of his platoon as a reserve. If the platoon is the supporting effort, the platoon leader may require up to a squad as a reserve. The platoon leader may employ his squads in one of the following ways:

(a) Two squads and one or both machine guns as the base-of-fire element and one squad (with the remaining machine gun) as the assault element.

(b) One squad and one or both machine guns as the base-of-fire element and two squads (with the remaining machine gun) as the assault element.

(c) One squad and one or both machine guns as the base-of-fire element, one squad as the assault element, and one squad (with the remaining machine gun) to follow and support the assault element. This method generally supports the organization of the platoon for breaching obstacles during the assault.

(2) Additionally, if the company commander's concept calls for decentralized execution, the platoon leader must consider his objective, a vulnerable flank or exploitable weakness, routes, movement and fire control measures, and formations and movement techniques. The platoon leader considers these along with the factors of METT-T and the commander's intent to develop a scheme of maneuver and a fire support plan.

b. **Movement to the Objective.** Platoons and squads use the appropriate formations and movement techniques to avoid contact and achieve

surprise (see Section III). The platoon must remain undetected. If detected early, the platoon concentrates direct and indirect fires, establishes a base of fire, and maneuvers to regain the initiative.

(1) ***Movement from the assembly area to the line of departure.*** The platoon moves forward from the assembly area under company control. When the platoon leader is already forward with the company commander, the platoon sergeant moves the platoon forward. Machine guns and antiarmor weapons can precede the rest of the platoon by moving to an overwatch position on or near the LD. Leaders time the move from the assembly area during reconnaissance or rehearsals to ensure that the lead squad crosses the LD on time and at the right place. The platoon attempts to cross the LD without halting in an attack position. If the platoon must halt in the attack position, it deploys into the initial attack formation, posts security, and takes care of last-minute coordination. Whether or not the platoon halts in the attack position, it must deploy into the attack formation and fix bayonets before crossing the LD.

(2) ***Movement from the line of departure to the assault position or support position.*** The platoon moves using the appropriate technique. If it has its own support and assault elements, it may move them together for security, or along separate routes to their respective positions, for speed. The base-of-fire element must be in place and ready before the assault element continues beyond the assault position.

(a) The platoon leader's plan must address actions on chance contact. The lead squad executes the battle drill to react to contact (see Chapter 4, Battle Drill 2). The platoon leader makes an assessment and reports. The company commander may direct the platoon to fight through, fix, and bypass the enemy, or establish a hasty defense.

(b) If the platoon encounters an obstacle that it cannot bypass, it attempts a breach (see Section X and Chapter 4, Battle Drill 8).

(c) If the company concept calls for decentralized execution, the platoon leader must consider when to initiate his supporting fires.

Ž Surprise. If the attack is not detected, the base-of-fire element may hold fires until the assault element approaches the assault position. This will enhance surprise. The base-of-fire element may initiate fires early to keep the enemy's attention off the assault element as it moves to a flanking or rear position.

Ž Suppression. The leader must consider the length of time needed to suppress the enemy position and destroy as many of his weapons and bunkers as possible before the assault.

(3) Movement from the assault position to the objective. The assault position is normally the last covered and concealed position before reaching the objective.

(a) As it passes through the assault position, the platoon deploys into its assault formation; that is, its squads and fire teams deploy to place the bulk of their firepower to the front as they assault the objective. A platoon sometimes must halt to complete its deployment and to ensure synchronization so that all squads assault at the designated time.

NOTE: Platoons should avoid halting in the assault position, because it is dangerous and may cause the loss of momentum.

(b) The assaulting squads move from the assault position and onto the objective. The platoon must be prepared to breach the enemy's protective obstacles.

(c) As the platoon moves beyond the obstacle, supporting fires should begin lifting and shifting away from the objective. Both direct and indirect fires shift to suppress areas adjacent to the objective, to destroy enemy forces retreating, or to prevent enemy reinforcement of the objective.

c. **Assaulting the Objective.** As the platoon or its assault element moves onto the objective, it must increase the volume and accuracy of fires. Squad leaders assign specific targets or objectives for their fire teams. Only when these discreet fires keep the enemy suppressed can the rest of the unit maneuver. As the assault element gets closer to the enemy, there is more emphasis on suppression and less on maneuver. Ultimately, all but one fire team may be suppressing to allow that one fire team to break in to the enemy position. Throughout the assault, soldiers use proper individual movement techniques, and fire teams retain their basic shallow wedge formation. The platoon does not get "on-line" to sweep across the objective.

d. **Consolidation and Reorganization.** Once enemy resistance on the objective has ceased, the platoon must quickly take steps to consolidate and prepare to defend against a counterattack.

(1) **Consolidation techniques.** Platoons use either the clock technique or the terrain feature technique in consolidating on the objective.

NOTE: All-round security is critical. The enemy might counterattack from any direction. The platoon leader must evaluate the terrain thoroughly.

(a) *Clock technique.* In using this method, the platoon leader designates either a compass direction or the direction of attack as 12 o'clock. He then uses clock positions to identify the left and right boundaries for squads. The platoon leader positions key weapons along the most likely avenue of approach based on his assessment of the terrain. (See Figure 2-34.)

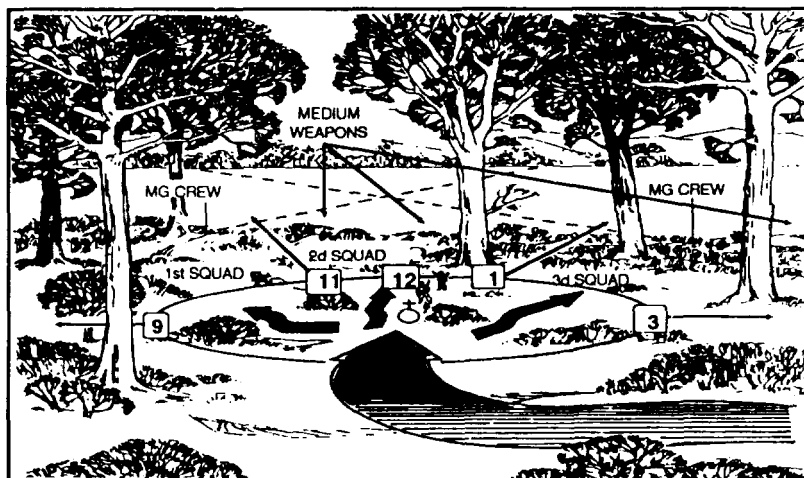


Figure 2-34. Clock technique.

(b) *Terrain feature technique.* In a similar manner, the platoon leader identifies obvious terrain features as the left and right limits for squads. In both techniques, he ensures that squad sectors of fire overlap each other and provide mutual support for adjacent units. (Figure 2-35.)

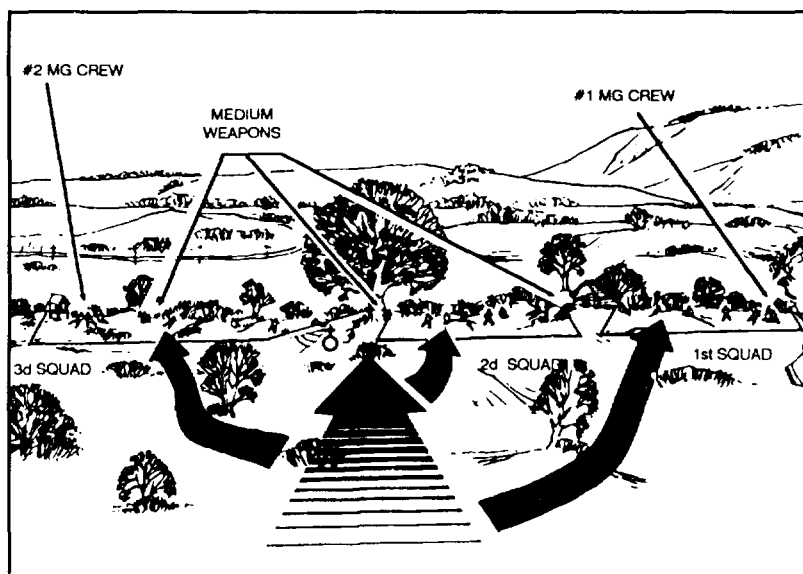


Figure 2-35. Terrain feature technique.

(2) **Reorganization.** Once platoons have consolidated on the objective, they begin to reorganize. Platoons reorganize to continue the attack. Reorganization involves—

- Ž Reestablishing command and control.
- Ž Remanning key weapons, redistributing ammunition and equipment.
- Ž Clearing the objective of casualties and EPWs
- Ž Assessing and reporting the platoon status of personnel, ammunition, supplies, and essential equipment.

2-14. ATTACKS DURING LIMITED VISIBILITY

Attacks during limited visibility achieve surprise, avoid heavy losses, cause panic in a weak and disorganized enemy, exploit success and maintain momentum, and keep pressure on the enemy. Limited visibility operations are one of the main missions of infantry forces. Whenever possible, US infantry will use limited visibility to conduct attacks.

a. **Planning.** The planning considerations for daylight attacks are the same as for limited visibility attacks. However, limited visibility attacks require additional control measures to prevent fratricide and keep the attack focused on the objective. Leaders may use boundaries, restrictive fire lines, and limits of advance to assist in control.

b. **Reconnaissance.** Reconnaissance is key to successful night attacks. It should be conducted during daylight down to the lowest level possible. The platoon should reconnoiter the routes on which they will move, the positions that they will occupy, and the assigned objective. The need for detailed information about the enemy must be balanced against the risk of being detected and the loss of surprise.

(1) The reconnaissance plan should also establish surveillance on the objective in case the enemy repositions units and weapons or prepares additional obstacles. Surveillance and security forces should also secure critical locations, such as assault and support positions, LD and PLD, routes, and RPs, to protect the platoon from enemy ambushes and spoiling attacks. These security forces may become part of the isolation element during the attack.

(2) When reconnaissance does not succeed due to lack of time, the platoon leader requests a delay in the attack time to allow for further reconnaissance. If this is not possible, an illuminated and supported attack should be considered. A night attack with marginal information of the enemy's defense is risky and difficult to conduct.

c. **Use of Guides.** During limited visibility attacks, the platoon may use guides to provide better control while moving into the assault position and onto the probable line of deployment (PLD).

(1) The company may organize a patrol to place platoon guides from the LD to subsequent RPs, at the entrance to the assault positions and at points along the PDL.

(2) Guides must be fully briefed on the plan and on their specific duties. They must rehearse their actions, to include—

\bar{Z} Reconnaissance of their assigned routes and release points.

\bar{Z} Pick-up and release of their assigned units. They must be able to identify the leader of the element they will guide (or the lead soldier of that element). They must also know and rehearse recognition signals.

(3) Platoons must rehearse their actions in the same order of march and sequence that they intend to use during the attack in order to make the pick-up and release of guides go smoothly.

d. **Fire Control Techniques.** Fire control techniques for limited visibility include the following.

(1) **Tracer fire.** Leaders in the assault element fire all tracers; their soldiers fire where the leader's tracers impact. The support element positions a machine gun on a tripod on the flank nearest the assault force. This weapon fires a burst of tracers every 15 seconds to indicate the near limit of the supporting fires. All other weapons in the support element keep their fires on the appropriate side of this tracer. The assault force signals to shift fires to the next position or to a set distance. If required, these rounds can be adjusted over the assault element to preclude fratricide.

(2) **Luminous tape or chemical lights.** Leaders mark assault personnel to prevent fratricide. The enemy must not be able to see the marking. Two techniques are to place tape on the back of the helmet or to use small infrared chemical lights (if the enemy has no NVDs). The support element must know where the lead assault element is. If the individual soldier markings do not suffice, large chemical lights (infrared or visible) are used. These lights are placed on the ground or thrown in front of the assault element. When clearing a trench line, soldiers may put chemical lights on a stick and move them with the lead element to ensure the support element shifts fires.

(3) **Weapon control restrictions.** To reduce the risk to the assault element, the leader may assign weapon control restrictions.

(a) The squad on the right in the assault might be given weapons free to the right flank because no friendly soldiers are there. However, weapons tight or hold on the left means that another friendly unit is located there.

(b) No automatic weapons will be fired by the assault force on the objective. This ensures that all automatic weapons are enemy.

(4) **Other techniques.** To increase control during the assault, the leader may use the following.

- Ž No flares, grenades, or smoke used on the objective.
- Ž Only certain personnel with NVDs can engage targets on the objective.
- Ž A magnetic azimuth for maintaining direction.
- Ž Mortar or artillery rounds to orient attacking units.
- Ž Guides.
- Ž A base squad or fire team to pace and guide others.
- Ž Reduced intervals between soldiers and squads.
- Ž Luminous tape on armbands or helmets.

e. **Mortar, Artillery, and Antiarmor Fires.** Mortar, artillery, and antiarmor fires are planned as in a daylight attack. They are not fired, however, unless the platoon is detected or is ready to assault. Some weapons may fire before the attack and maintain a pattern to deceive the enemy or to help cover noise made by the platoon's movement. This is not done if it will disclose the attack.

(1) Indirect fire is hard to adjust when visibility is poor. If doubt exists as to the exact friendly locations, indirect fire is directed first at enemy positions beyond the objective and then moved onto the objective. Illuminating rounds that are fired to burn on the ground can be used to mark objectives. This helps the platoon orient on the objective but also may adversely affect NVDs.

(2) Smoke is planned to further reduce the enemy's visibility, particularly if he has NVDs. The smoke is laid close to or on enemy positions so it does not restrict friendly movement or hinder the breaching of obstacles. Employing smoke on the objective during the assault may make it hard for assaulting soldiers to find enemy fighting positions. If enough thermal sights are available, smoke on the objective may provide a decisive advantage for a well-trained platoon.

(3) Illumination is always planned for limited visibility attacks, giving the leader the option of calling for it. Battalion commanders normally control the use of illumination but may authorize the company commander to do so. If the commander decides to use illumination, illumination should not be called for until the assault is initiated or the attack is detected. It should be placed on several locations over a wide area to confuse the enemy as to the exact place of the attack. Also, it should be placed beyond the objective to help assaulting soldiers see and fire at withdrawing or counterattacking enemy soldiers.

(4) Illumination may also be required if the enemy uses illumination to disrupt the effect of the NVDs. Once used, illumination must be continuous because attacking soldiers will have temporarily lost their

normal night vision. Any interruption in illumination may also reduce the effect of suppressive fire when the attackers need it most. Squad leaders must not use hand flares before the commander has decided to illuminate the objective.

(5) Thermal sights (AN/TAS-5) may be employed strictly for observation if there are no targets for the Dragons to engage. Positioned outside the objective area, these sights can provide current information. They may be used to assist the support element in controlling their fires or to provide the assault element with reports of enemy movements on the objective.

(6) When only a few NVDs are available, they must be employed at the most critical locations. These locations can be with the key soldiers in the breach element, key leaders in the assault element, other members of the assault element and key leaders and weapons in the support element.

f. Consolidation and Reorganization. After seizing the objective, the platoon consolidates and reorganizes. Consolidation and reorganization are the same as for a daylight attack with the following exceptions:

(1) The consolidation plan should be as simple as possible. In reorganizing, the platoon should avoid changes to task organization.

(2) Squad positions should be closer to case control and to improve mutual support. Position distances should be adjusted as visibility improves.

(3) Locating and evacuating casualties and EPWs takes longer. EPWs may have to be moved to the rear of the objective and held there until visibility improves.

g. Communication. Communication at night calls for the leader to use different methods than during daylight. For instance, arm-and-hand signals used during the day might not be visible at night. Other types of signals are used to pass information, identify locations, control formations, or begin activity. The key to tactical communications is simplicity, understanding, and practice. Signals should be an integral part of the platoon SOP. They should be as simple as possible to avoid confusion. Leaders should also ensure that every soldier understands and practices each basic signal and its alternate if the need arises. A technique to assist leaders and the RATELO with communication at night is to attach a large patch of luminous tape to the handset, or carry it in their pockets. Leaders and the RATELO can write target numbers, call signs, frequencies, code words, checkpoints, and so forth on it with a black grease pencil. This is easy to read at night and quickly removed if needed.

(1) The most common signals relate to the senses—sound, feel, and sight. Audio signals include radio, telephones, messengers, and grating or clicking of objects together. Messengers should carry written messages to avoid confusion and misunderstanding. When this is not possible,

leaders ensure that the messenger understands the message—have him repeat it word for word.

(2) Control at night involves some oral communication but spoken in a whisper. The radio and telephone might not be suitable at night. If either is used, the leader must be careful. Noise travels farther at night; including radio sounds, messages being passed, and the telephone ringing. These violate noise discipline and can be avoided or reduced by planned signals or clicks. Headphones reduce the amount of noise from telephones and radios. If headphones are not available, soldiers use the radio selector switch in the ON rather than SQUELCH ON position and adjust the volume so that only a faint rushing sound can be heard.

(3) Rocks and other objects can be used to send audible signals. They can be tapped or scraped together or against a tree or rifle stock to pass a message. These signals must be rehearsed. For each signal there must be a reply to show receipt of the signal. Other audible signals are whistles, bells, sirens, clackers or “crickets,” and horns. The device or method chosen depends on simplicity and security.

(4) Leaders can use a variety of visual signals as alternatives to audio signals. The signals can be active or passive. Visual signals must be noticeable and identifiable. These signals can be used to identify a critical trail junction, to begin an attack, to mark caches, or to report that a danger area is clear. For example, white powder can be used to show direction at a confusing trail intersection. Star clusters can signal to lift or shift support fires for an attack or raid. Chemical lights can signal a unit cache. The exposed dial of a compass can signal all clear when crossing a danger area. The possibilities are endless, but the leader must ensure that each soldier understands every signal. Some signals are—

- VS-17 panels.
- Sticks showing direction.
- Light-colored paint.
- Tape.
- Rock formations.
- Markings in the ground.
- Foot or talcum powder.
- Luminous tape.
- Flares.
- Flashlights.
- Illumination rounds (grenade launcher, mortar, artillery).
- Chemical lights.
- Infrared strobe lights.
- AN/PVS-5 night vision device.

Ž Burning fuel (saturated sand in a can).

Ž Luminous compass dial.

(5) Wire is a means of maintaining communications during the attack. The wire net should link the squad leaders, platoon leaders, and the company commander. At times, a security patrol can lay the wire before the attack. If not, the wire can be laid as the units move. The laying of wire before an attack could lead to discovery of the attack if the wire is not properly hidden, or if it is laid too far in advance. The wire net can be used to communicate while moving.

(a) *Platoon net.* Wire is laid from the platoon RP to the squad RP and to each squad leader's position on the PLD.

(b) *Assault wire.* Assault wire can be used as a guide from the company RP to the platoon and squad RPs.

(c) *Radios.* Squad radios can be used for backup communications.

h. Target Detection. The ability to detect targets at night depends on patience, alertness, attention to detail, and practice. Nature provides an endless array of patterns. However, man disturbs them or alters them so that they are detectable. Sensing the enemy at night requires leaders and soldiers to be patient, confident, and calm.

(1) Stealthy night movement and successful target engagement depend on knowing how the enemy attacks, defends, and uses terrain. Studying his techniques and established patterns helps in detecting targets.

(2) Patience and confidence are musts for effective target sensing at night. While moving through an area, soldiers must think "patterns." They must look calmly and methodically through the area, not focusing on the surface alone but on patterns—noticing straight lines, strange patterns, and light variations.

(3) Soldiers must look for sentries or positions at the entrances to draws, overlooking bridges and obstacles and on the military crests of prominent terrain (the spots used for best observation). They look for supporting positions, keeping in mind range distances for supporting weapons, NVDs, and LOS needs. Then soldiers search for enemy positions and other signs of enemy activity.

Section V. DEFENSE

Paragraph 3b of the platoon SOP (Chapter 5) provides a suggested sequence of tasks for establishing a defensive position. This section follows that sequence in describing techniques used in the planning and preparation phases of defensive operations.

2-15. CONDUCT OF THE DEFENSE

This paragraph provides a pattern of preparation, decision, and execution for platoons and squads. This pattern links the leader's critical decision points to a standard sequence of actions that a platoon takes in defensive operations. (Figure 2-36, page 2-71.) The standard sequence of actions are—

- Ž Prepare for Combat.
- Ž Move to Defensive Positions.
- Ž Establish Defensive Positions.
- Ž Locate the Enemy.
- Ž Initiate Contact/Actions on Enemy Contact.
- Ž Fight the Defense.
- Ž Reorganize.

a. **Prepare for Combat.** The platoon leader receives the company warning or operation order.

- (1) The platoon leader quickly issues a warning order.
- (2) The platoon leader begins making a tentative plan based on his estimate of the situation and an analysis of METT-T.
- (3) When possible the platoon leader (and squad leaders) reconnoiters the defensive position and the route(s) to it. The leader's reconnaissance party should always include a security team (minimum of two soldiers). The leader's reconnaissance—
 - (a) Maintains security.
 - (b) Checks for enemy positions, or signs of past enemy activities, obstacles, booby traps, and NBC contamination.
 - (c) Confirms/adjusts squad positions and sectors of fire from those in the tentative plan. (Normally the platoon leader assigns and adjusts machine guns and antiarmor positions.) The platoon leader revises his plan as necessary based on a further assessment of METT-T.
 - (d) As the reconnaissance party returns to the platoon, the platoon leader posts guides along the route to maintain security and help the platoon move into the position.
 - (4) Based on his reconnaissance, and any additional information, the platoon leader completes and issues his plan.
 - (5) All squad leaders check (the platoon sergeant spot checks) weapons, communications equipment and accessories for missing items (squad and individual) and serviceability.

(6) The platoon sergeant makes sure that the platoon has ammunition, food, water, and medical supplies on hand, in quantities prescribed by the platoon leader. (Squads and platoons should plan to prestock an additional basic load of ammunition on the defensive position.)

(7) All soldiers camouflage themselves and their equipment to blend with the terrain.

(8) The platoon rehearses critical tasks first.

(a) The platoon leader makes final inspection of weapons (test fires weapons, if possible), equipment (include communications checks), and personnel (include camouflage). The platoon sergeant closely monitors the soldiers' load to ensure that standard items are packed in accordance with the platoon SOP and that it is not excessive.

(b) If an advance party is used, the platoon leader, platoon sergeant, and advance party leader (normally a squad leader) review advance party activities and redistribute equipment to the advance party (for example, tripods, stakes). (See Chapter 5.)

(9) If not already moving, the platoon leader initiates the movement of his platoon.

b. Move to Defensive Positions. The platoon applies fundamentals of movement:

(1) Move on covered and concealed routes.

(2) Avoid likely ambush sites.

(3) Enforce camouflage, noise, and light discipline.

(4) Maintain all-round security, to include air guards.

(5) Use formations and movement techniques based on METT-T.

c. Establish Defensive Positions. The platoon halts short of the defensive position in a covered and concealed position, and establishes local security.

(1) The platoon leader and squad leaders and a security team (minimum of two soldiers) move forward to link up with the security team on the position.

(a) The squad leaders return to the platoon and move their squads forward.

(b) The platoon occupies the designated position. Guides control the movement of the platoon into position.

(2) As the platoon occupies its position, the platoon leader ensures that all tasks are performed in the stated priority of work. Additionally, the platoon leader—

Ž Walks forward of positions, if possible to check camouflage and confirm dead space. The most important aspect of infantry fighting positions is that they cannot be observed by the enemy until it is too late.

Ž Checks on wire and mine teams. The platoon leader ensures that protective wire is outside of hand-grenade range from the fighting positions and tactical wire lies along the friendly side of the final protective line (FPL).

Ž Briefs the platoon sergeant on the logistics plan (include resupply and casualty evacuation routes).

Ž Issues finalized platoon order and checks soldier knowledge and understanding. (All soldiers must be aware of friendly units forward of the position [for example, patrols, scouts] and their return routes. They must also know the signals or conditions to initiate, shift, fire final protective, and cease fires, and to reposition to alternate and supplementary positions.)

(3) The platoon improves the position continuously.

d. **Locate the Enemy.** The platoon establishes and maintains OPs and conducts security patrols as directed by the company commander. Patrols, OPs, and individual soldiers look and listen. They use night surveillance devices, binoculars, and PEWS to detect the enemy approach.

e. **Action on Enemy Contact.** Once the enemy is detected, the platoon leader—

Ž Alerts the squad leaders, platoon sergeant, and his forward observer.

Ž Reports the situation to the company commander.

Ž Calls in OPs. (The squad leader or platoon leader may decide to leave the OPs in place if the soldiers manning them can provide effective flanking fires, their positions afford them adequate protection, and or their return will compromise the platoon's position.)

- Calls for and adjusts indirect fire when the enemy is at maximum range.
- Initiates the long-range direct fires of his platoon on command from the company commander.

Leaders and individual soldiers return to their positions and prepare to fire on command from the platoon leader.

f. **Fight the Defense.** The platoon leader determines if the platoon can destroy the enemy from its assigned positions.

(1) If the answer is YES, the platoon continues to tight the defense.

(a) The platoon leader, or FO, continues to call for indirect fires as the enemy approaches. The platoon normally begins engaging the enemy at maximum effective range. It attempts to mass fires and initiate them simultaneously to achieve surprise. Long-range fires tied-in with obstacles should disrupt his formations; channelize him toward engagement areas; prevent, or severely limit his ability to observe the location of

friendly positions; and destroy him as he attempts to breach tactical obstacles.

(b) Leaders control fires using standard commands, pyrotechnics, and other prearranged signals. The platoon increases the intensity of fires as the enemy closes within range of additional weapons. Squad leaders work to achieve a sustained rate of fire from their positions by having buddy teams fire their weapons so that both are not reloading them at the same time.

(c) In controlling and distributing fires, the platoon and squad leaders consider—

- ✎ The range to the enemy.
- ✎ Priority targets (what to fire at, when to fire, and why).
- ✎ Nearest or most dangerous targets.
- ✎ Shifting to concentrate fires on their own or as directed by higher headquarters.
- ✎ Ability of the platoon to engage dismounted enemy with enfilading, grazing fires.
- ✎ Ability of the platoon's antiarmor weapon to achieve flank shots against enemy vehicles.

(d) As the enemy closes on the platoon's protective wire, the platoon leader initiates final protective fires (FPF) (the following actions occur simultaneously):

- ✎ Machine guns and automatic weapons fire along interlocking principle direction of fire (PDF), or final protective lines (FPL) as previously designated and planned. Other weapons fire at designated principle direction of fires. M203 grenade launchers engage enemy in dead space or against enemy attempts to breach protective wire.
- ✎ The platoon continues to fight with Claymores and hand grenades.
- ✎ If applicable, the platoon leader requests indirect final protective fires (FPF) if they have been assigned in support of his positions.

(e) The platoon continues to defend until the enemy is repelled, or the platoon is ordered to disengage.

(2) If the answer is NO, the platoon leader—

(a) Reports the situation to the company commander.

(b) Continues to engage the enemy or repositions the platoon (or squads of the platoon) only when directed by the company commander to—

- ✎ Continue fires into the platoon sector (engagement area).
- ✎ Occupy supplementary positions.

- Ź Reinforce other parts of the company.
- Ź Counterattack locally to retake lost fighting positions.
- Ź Withdraw from an untenable position using fire and movement to break contact. (The platoon leader does not move his platoon out of position if it will destroy the integrity of the company defense. All movements and actions to reposition squads and platoons must be thoroughly rehearsed.)

NOTE: In any movement out of a defensive position, the platoon **MUST** employ all direct and indirect fire means available to suppress the enemy long enough for the unit to move.

g. Consolidate and Reorganize.

- (1) The platoon—
 - Ź Reestablishes security.
 - Ź Remans key weapons.
 - Ź Provides first aid and prepares wounded soldiers for MEDEVAC.
 - Ź Repairs damaged obstacles and replaces mines (Claymore) and booby traps.
 - Ź Redistributes ammunition and supplies.
 - Ź Relocates selected weapons to alternate positions if leaders believe that the enemy may have pinpointed them during the attack. Adjusts other positions to maintain mutual support.
 - Ź Reestablishes communications.
 - Ź Reoccupies and repairs positions, and prepares for renewed enemy attack.
- (2) Squad and team leaders provide ammunition, casualty, and equipment (ACE) reports to the platoon leader.
- (3) The platoon leader—
 - Ź Reestablishes the platoon chain of command.
 - Ź Consolidates squad ACE and provides ACE report to the company commander.
- (4) The platoon sergeant coordinates for resupply and supervises the execution of the casualty and EPW evacuation plan.
- (5) The platoon continues to improve positions. The platoon quickly reestablishes OPs and resumes patrolling as directed.

Ž At armor in the secondary sector.

Ž At armored vehicles beyond 200 meters.

(2) *Machine gun gunner fire*—

Ž The FPL or PDF, if signaled to do so.

Ž At groups of five or more in the primary sector (from farthest to closest).

Ž At crew-served automatic weapons.

Ž At groups of five or more in the secondary sector.

Ž At unarmored vehicles.

(3) *Automatic riflemen fire*—

Ž Along the FPL, if signaled to do so.

Ž At groups of five or more in the primary sector (closest to farthest).

Ž At soldiers in the primary sector.

(4) *Grenadiers fire*—

Ž At light armored vehicles in sector.

Ž At groups of three or more in sector.

Ž At groups of three or more in secondary sector.

Ž At individual soldiers in sector, using M16 rifles.

Ž At dead space in sector (if occupied by the enemy).

Ž At other targets as directed by squad or team leader (illumination or smoke on order).

(5) *Riflemen fire*—

Ž In their primary and secondary sectors.

Ž Nearest to farthest, starting on flank and working toward the center —

Ž At leaders.

Ž At RATELOs.

Ž At individual soldiers.

(6) *LAW gunners fire*—

Ž In two-soldier volleys on direction of the team or squad leaders.

Ž At nearby threatening vehicle.

e. **Rate of Fire.** Some weapon system FMs specify rates of fire by name-others do not. The doctrinal terms should be used when possible; others are addressed by SOP.

2-25. PRIORITY OF WORK

The platoon's priority of work is a list of tasks that the leader uses to control what gets done by whom and in what order in the preparation of the defense. These tasks are normally prescribed in the SOP. An example of priority of work tasks by duty position is in Chapter 5. The leader adjusts the priority of work based on his consideration of the

factors of METT-T and on his and the higher commander's intent. The platoon's normal priority of work is—

- Ǻ Establish local security
- Ǻ Position antiarmor weapons, machine guns, and squads and assign sectors of fire.
- Ǻ Position other assets attached to the platoon.
- Ǻ Establish the CP and wire communications.
- Ǻ Designate FPLs and FPFs.
- Ǻ Clear fields of fire and prepare range cards and sector sketches.
- Ǻ Coordinate with adjacent units—left, right, forward, and to the rear.
- Ǻ Prepare primary fighting positions.
- Ǻ Emplace obstacles and mines.
- Ǻ Mark or improve marking for TRPs and other fire control measures.
- Ǻ Improve primary fighting positions such as overhead cover.
- Ǻ Prepare alternate positions, then supplementary positions.
- Ǻ Establish a sleep and rest plan.
- Ǻ Reconnoiter routes.
- Ǻ Rehearse engagements, disengagements, and any counterattack plans.
- Ǻ Adjust positions or control measures as required.
- Ǻ Stockpile ammunition, food, and water.
- Ǻ Dig trenches to connect positions.
- Ǻ Continue to improve positions.

2-26. COORDINATION

Coordination between adjacent platoons/squads is normally from left to right and from front to rear. Information exchanged includes the following:

- Ǻ Location(s) of leaders.
- Ǻ Location of primary, alternate, and supplementary positions and sectors of fire of machine guns, antiarmor weapons, and subunits.
- Ǻ Route to alternate and supplementary positions.
- Ǻ Location of dead space between platoons and squads and how to cover it.
- Ǻ Location of OPs and withdrawal routes back to the platoon's or squad's position.
- Ǻ Location and types of obstacles and how to cover them
- Ǻ Patrols to be conducted to include their size, times of departure and return, and routes.

- Ž Location, activities, and presage plan for scouts and other units forward of the platoon's position.
- Ž Signals for fire and cease fire and any other signals that may be observed
- Ž Engagement and disengagement criteria.

2-27. FIGHTING POSITIONS

This paragraph discusses techniques for the construction of infantry fighting positions. Infantrymen use hasty; one-, two-, and three-soldier; machine gun; medium and light antitank; and 90-mm recoilless rifle positions. Soldiers must construct fighting positions that protect them and allow them to fire into their assigned sectors.

a. **Protection.** Fighting positions protect soldiers by providing **cover** through sturdy construction, and by providing **concealment** through positioning and proper camouflage. The enemy must not be able to identify the position until it is too late and he has been effectively engaged. When possible, soldiers should site positions in nonobvious places, behind natural cover, and in an easy to camouflage location. **The most important step in preparing fighting position is to make sure that it cannot be seen.**

In constructing fighting positions, soldiers should always—

- Ž Dig the positions armpit deep.
- Ž Fill sandbags about 75 percent full.
- Ž Revet excavations in sandy soil.
- Ž Check stabilization of wall bases.
- Ž Inspect and test the position daily, after heavy rain, and after receiving direct or indirect fires.
- Ž Maintain, repair, and improve positions as required.
- Ž Use proper materiel. Use it correctly.

NOTE: In sandy soil, vehicles should not be driven within 6 feet of the positions.

b. **Siting to Engage the Enemy.** Soldiers must be able to engage the enemy within their assigned sectors of fire. They should be able to fire out to the maximum effective range of their weapons with maximum grazing fire and minimal dead space. Soldiers and leaders must be able to identify the best location for their positions that meet this criteria. Leaders must also ensure that fighting positions provide interlocking fires. This allows them to cover the platoon's sector from multiple positions and provides a basis for final protective fires.

c. **Prepare by Stages.** Leaders must ensure that their soldiers understand when and how to prepare fighting positions based on the situation. Soldiers normally prepare hasty fighting positions everytime the platoon halts (except for short security halts), and only half of the platoon digs in

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 6

Extracted Material from FM 7-10

This student handout contains 12 pages of extracted material from the following publication:

FM 7-10, The Infantry Rifle Company, 14 Dec 1990 w/C1, 31 Oct 2000

Chapter 5

Pages 5-35 thru 5-46

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

5-20. DEFENSE IN SECTOR

This disposition may consist of platoon sectors, a series of mutually supporting BPs on armor-restrictive terrain, or a combination of the two (Figure 5-14). Positions are arrayed in depth. The strength of this defense comes from its flexibility. This defense normally orients on the enemy force and not retaining terrain. It is effective because it allows the enemy to expose his flanks and critical C2 and CS assets through his own maneuver into the depth of the defense.

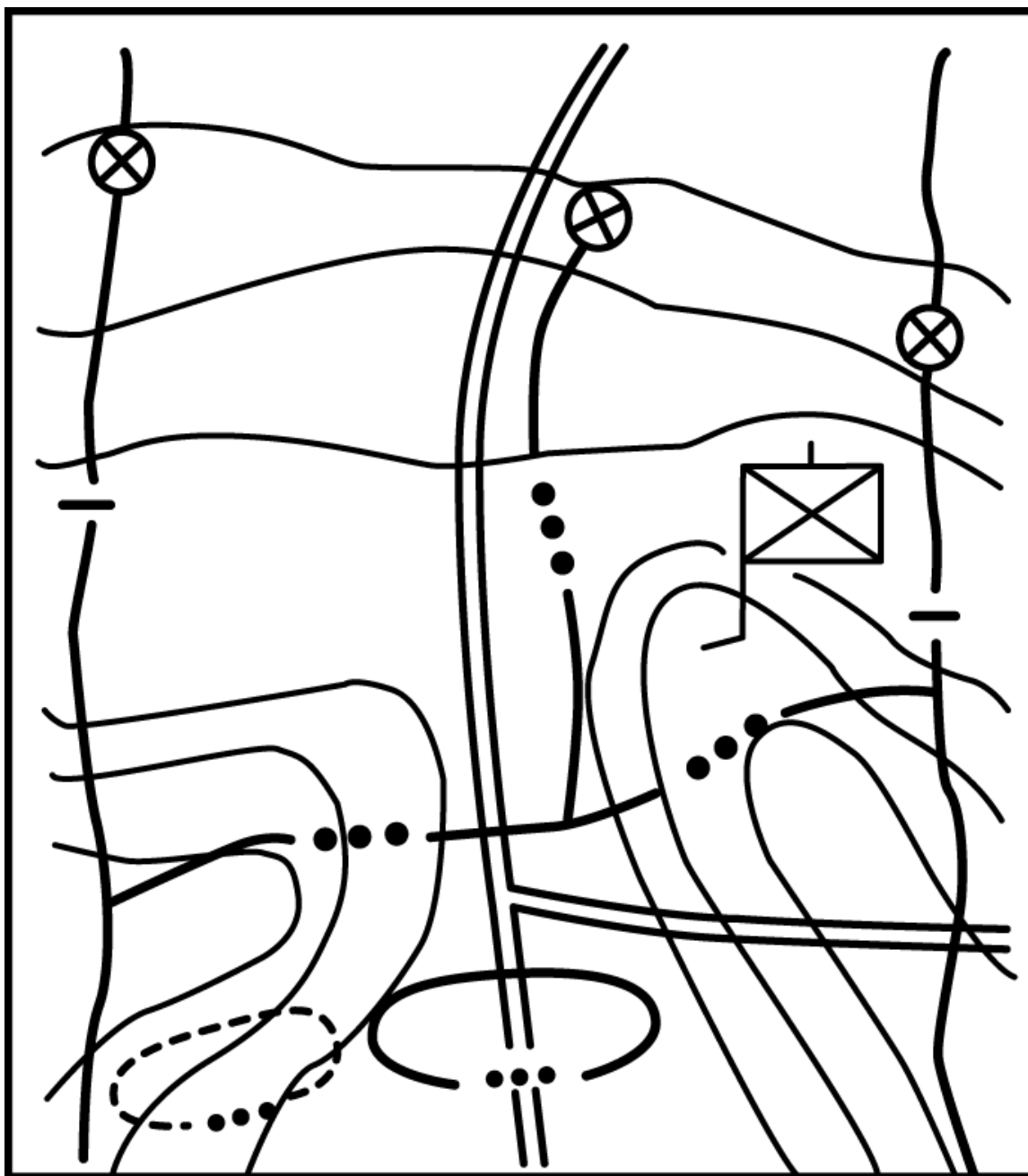


Figure 5-14. Defense in sector.

a. The company defense in sector may be fought very similar to the nonlinear defense. This is done by assigning platoon sectors. This decentralized technique for conducting a defense in sector requires greater initiative and delegates more of the control to subordinate leaders. The small-unit actions are very similar to the nonlinear defense. When required, squads or platoons may disengage independently and move to another location within the sector to continue the fight. Considerations for the company R&S plan and employment of a reserve are also very similar to the nonlinear defense.

b. When fighting a company defense in sector from platoon battle positions, the concept is to defeat the attacker through the depth of his formation, confronting him with effective fires from mutually supporting BPs as he attempts to maneuver around them. Mines, other obstacles, infantry positions, patrols, and PEWs cover gaps that, due to terrain masking or heavy woods, cannot be covered effectively by fire. Units remain in place except for local or internal movement to alternate or supplementary positions. If certain positions become untenable during the battle, the CO may withdraw them according to prepared plans.

(1) One technique is to allow the enemy to move into the EA and destroy him with massed fires. Another technique is to engage the attacker at maximum range with fires from tactical aircraft, attack helicopters, field artillery, and mortars. Then engage with organic antiarmor weapons positioned to deliver fires at maximum effective ranges from flanks and rear. As the enemy closes, antiarmor weapons may move to alternate and supplementary firing positions within the BP to continue firing and to avoid being bypassed.

(2) The company defense in sector from platoon battle positions generally requires the CO to be able to see and control the battle. It also requires good fields of fire to allow mutual support to be achieved. If the terrain or the expected enemy course of action would prevent this, the defense may be more effective if control was more decentralized and the platoons were fighting in sector.

c. A significant concern, particularly when fighting from BPs, is the enemy's ability to isolate a part of the company, fix, and then destroy them. Without effective mutual support between the BPs, this will likely occur. Even with mutual support, responsive and effective fire support may be critical to defending the BPs. Without immediately available fire support, a capable enemy will quickly concentrate combat power against any BP that is identified.

5-21. DEFENSE FROM BATTLE POSITIONS

Fighting from battle positions is a more centralized technique and also more linear at the company level (Figure 5-15). Although this defensive technique tends to be more linear and centralized, it should not be a static defense. Battle positions should be positioned to achieve surprise and to allow maneuver within and between BPs. It is effective in concentrating combat power into an engagement area. It prevents the enemy from isolating one part of the company and concentrating his combat power in this area. Normally, platoons are assigned mutual supporting battle positions that cover the enemy likely avenue of approach. These BPs are located on terrain that provides cover and concealment and restricts vehicular movement.

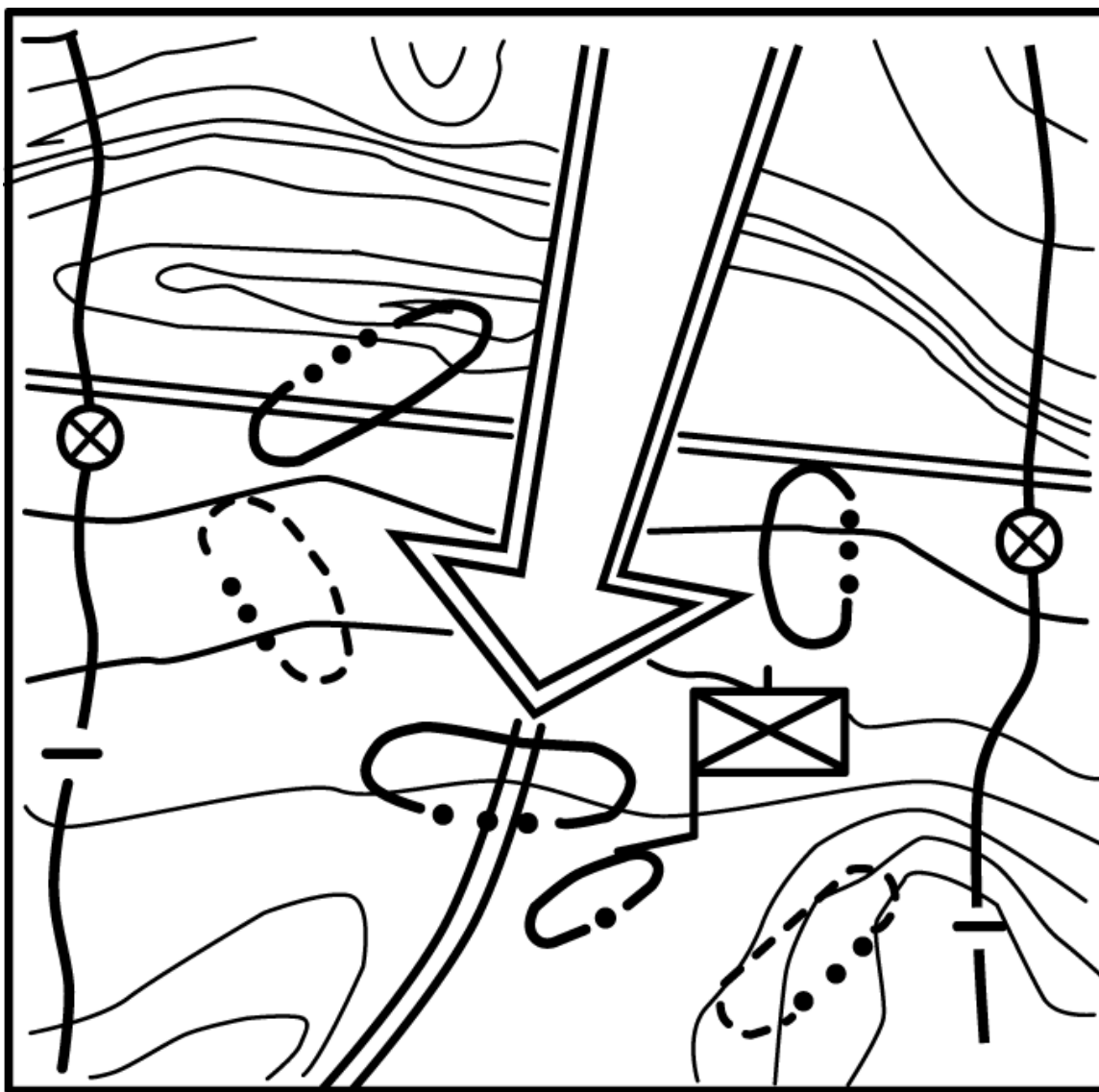


Figure 5-15. Mutually supporting BPs.

a. The commander's concept for fighting this type of defense should concentrate on achieving surprise from each of the BPs. This is accomplished by conducting an effective counterreconnaissance effort to prevent the enemy from locating the BPs and by initiating fires from one BP and waiting for the enemy to react to this engagement prior to engaging from the other BPs (Figure 5-16). Fighting in this manner will cause confusion among the enemy and disrupt his C2 process.

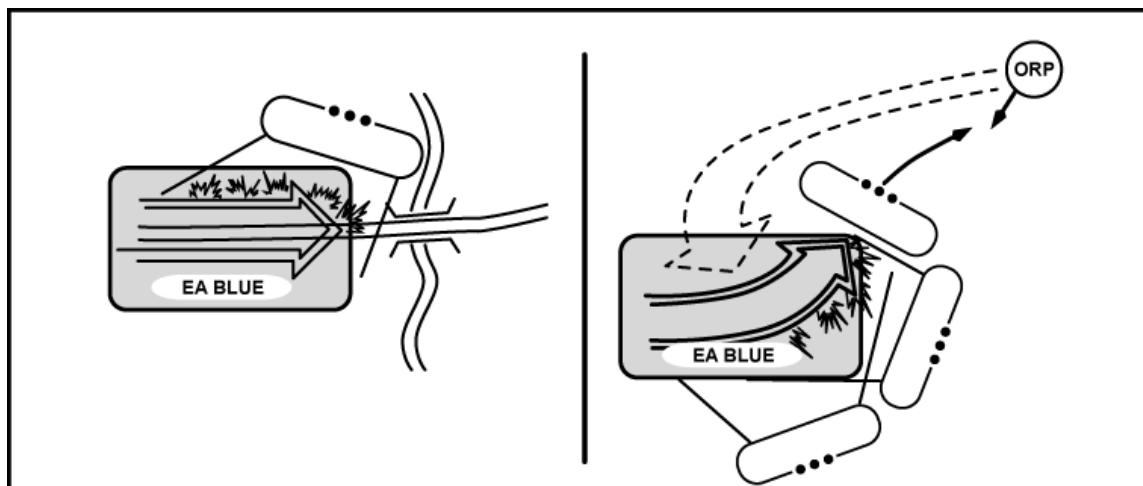


Figure 5-16. Opening fire to achieve surprise.

b. When the terrain provides a large EA and the commander's concept allows most of the enemy into the EA, the company may engage with massed fires from all of the platoon BPs. A disadvantage to this technique is that if there are still uncommitted enemy forces outside the EA, they will know the locations of the BPs and will attempt to isolate and concentrate against them. Contingency plans to disengage from these BPs and reorganize to continue the fight must be developed. This may involve displacing to alternate BPs or disengaging to conduct counterattacks/spoiling attacks against identified enemy C2, CS, or CSS assets.

c. Instead of one company EA, multiple EAs may be identified to provide flexibility to the plan (Figure 5-17). The plan must clearly state when platoons must reorient fires into the alternate engagement area.

5-22. DEFENSE ON A REVERSE SLOPE

An alternative to defending on the forward slope of a hill or a ridge is to defend on a reverse slope (Figure 5-18). In such a defense, the company is deployed on terrain that is masked by the crest of a hill from enemy direct fire and ground observation. Although some units and weapons may be positioned on the forward slope, the crest, or the counterslope (a forward slope of a hill to the rear of a reverse slope), most of them are on the reverse slope. The key to this defense is control of the crest by fire.

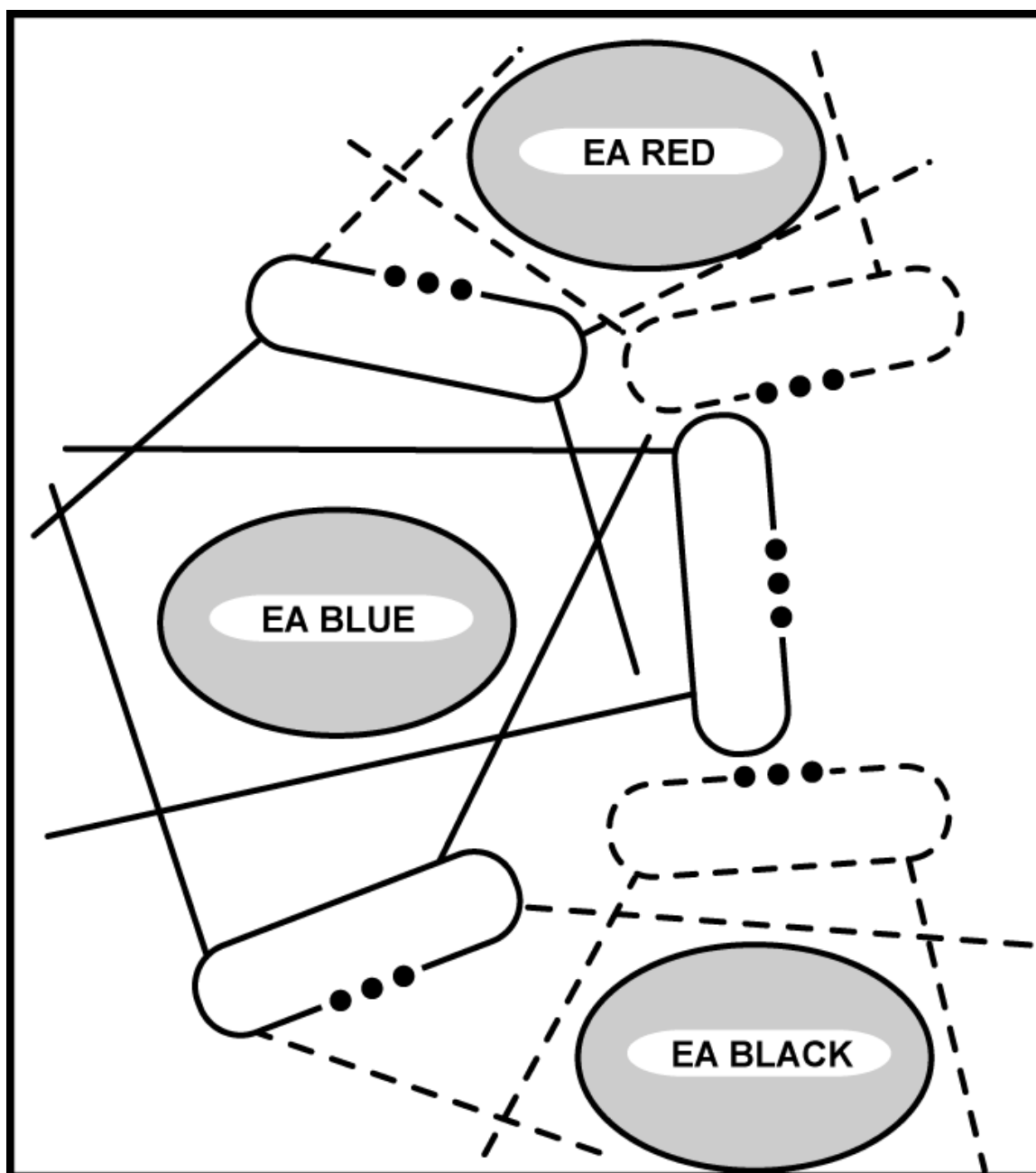


Figure 5-17. Multiple engagement areas.

a. **Considerations.** The following considerations apply when defending on a reverse slope.

(1) The crest protects the company from direct fire. This is a distinct advantage if the attacker has greater weapons range than the defender. The reverse slope defense can eliminate or reduce the "stand off" advantage of the attacker. It also makes enemy adjustment of his indirect fire more difficult since he cannot see his rounds impact. It keeps the enemy's second echelon from supporting the first echelon's assault.

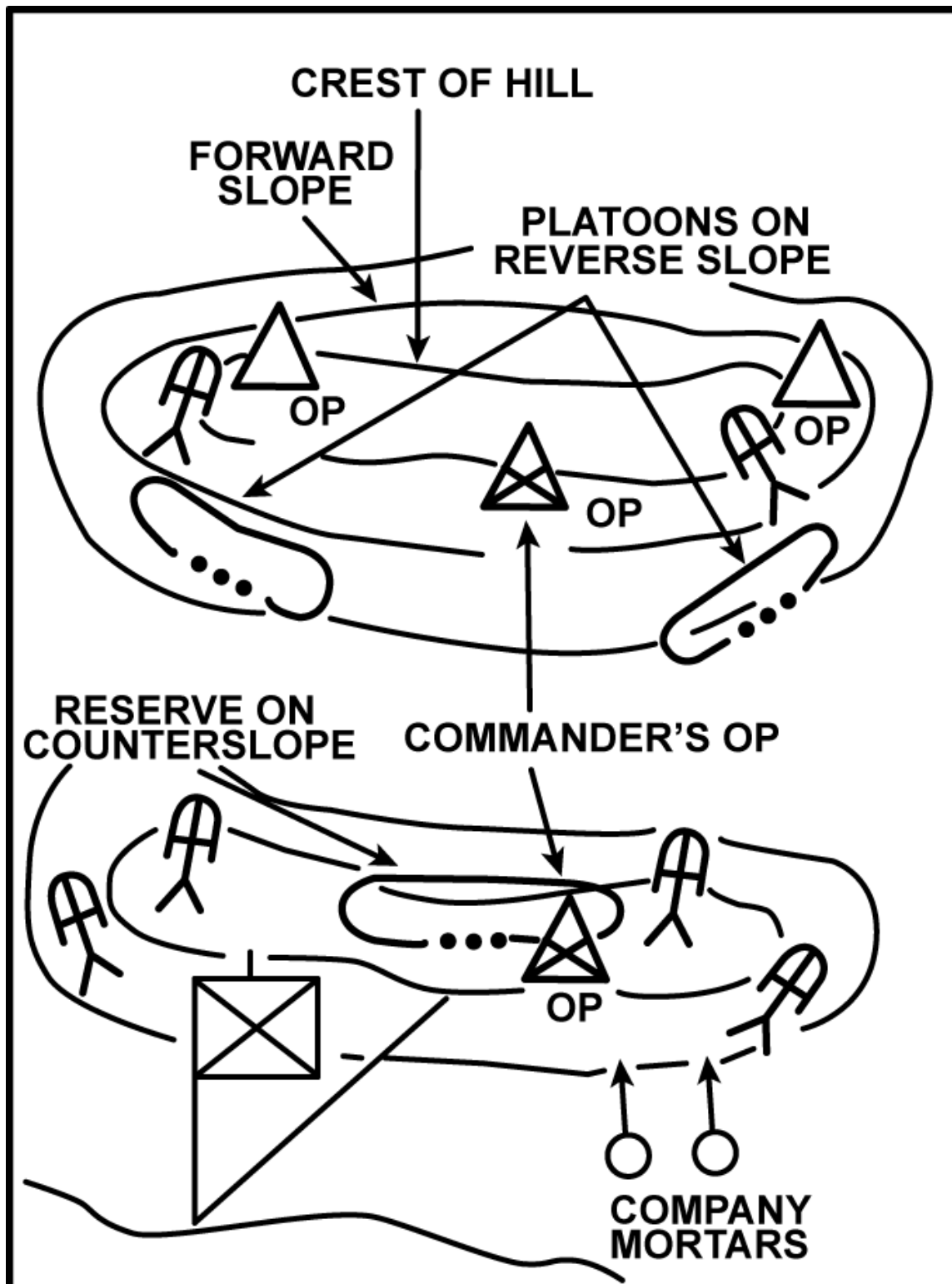


Figure 5-18. Company defense on a reverse slope.

(2) The enemy may be deceived and may advance to close contact before he discovers the defensive position. Therefore, the defender has the advantage of surprise.

(3) The defender can improve positions, build obstacles, and clear fields of fire without disclosing his positions.

(4) The defender may use dummy positions on the forward slope to deceive the enemy.

(5) Resupply and evacuation (when under attack) may be easier when defending on a reverse slope.

(6) Enemy target acquisition and jamming efforts are degraded. Enemy radar, infrared sights, and thermal viewers cannot detect soldiers masked by a hill. Radios with a hill between them and the enemy are less vulnerable to jamming and direction finders.

(7) Enemy use of CAS and attack helicopters is restricted. Enemy aircraft must attack defensive positions from the flank or from the rear, which makes it easier for friendly air defense weapons to hit them.

(8) A counterattacking unit has more freedom of maneuver since it is masked from the enemy's direct fire.

(9) It may allow antiarmor shots at the thinner armor on top of armored vehicles.

(10) The crest can provide protection from the blast effect of a nuclear explosion.

b. **Special Considerations.** The following considerations may apply when defending on a reverse slope.

(1) Observation of the enemy is more difficult. Soldiers in this position see forward no farther than the crest. This makes it hard to determine exactly where the enemy is as he advances, especially when visibility is poor. OPs must be placed forward of the topographic crest for early warning and long-range observation.

(2) Egress from the position may be more difficult.

(3) Fields of fire are normally short.

(4) Obstacles on the forward slope can be covered only with indirect fire or by units on the flanks of the company unless some weapons systems are initially placed forward.

(5) If the enemy gains the crest, he can assault downhill. This may give him a psychological advantage.

(6) If OPs are insufficient or improperly placed, the defenders may have to fight an enemy who suddenly appears in strength at close range.

c. **Feasibility.** A defense on a reverse slope may be effective when—

(1) The enemy has more long-range weapons than the defender.

(2) The forward slope has little cover and concealment.

(3) The forward slope is untenable because of enemy fire.

(4) The forward slope has been lost or not yet gained.

(5) There are better fields of fire on the reverse slope.

(6) It adds to the surprise and deception.

d. **Plans.** The fundamentals of the defense apply to a defense on a reverse slope.

(1) Forward platoon positions should be within 200 to 500 meters of the crest of the defended hill or ridge and sited so they block enemy approaches and exploit existing obstacles. They should permit surprise fire on the crest and the approaches around the crest. Forward fighting positions should have rear and overhead cover to protect friendly soldiers from fratricide.

(2) Post OPs, including FOs, on the crest or the forward slope of the defended hill. At night, OPs and patrol units should be increased to prevent infiltration. Machine guns may be attached to OPs.

(3) Position the company depth platoon/reserve where it can block the most likely penetration, support the forward platoons by fire, protect the flanks and the rear of the company, and, if necessary, counterattack. It may be positioned on the counterslope to the rear of the forward platoons if it can fire and hit the enemy when he reaches the crest of the defended hill.

(4) Position the company CP to the rear where it will not interfere with the reserve or supporting units. The CO may have an OP on the forward slope or crest and another on the reverse slope or counterslope. He uses the OP on the forward slope or crest before the battle starts when he is trying to determine the enemy's intentions. During the fight, he moves to the OP on the reverse slope or counterslope.

(5) Plan indirect fire well forward of, on, and to the flanks of the forward slope, crest, reverse slope, and counterslope. Plan indirect FPF on the crest of the hill to control the crest and stop assaults. Put the mortar section in defilade to the rear of the counterslope.

(6) Reinforce natural obstacles. A hasty protective minefield on the reverse slope—just down from the crest where it can be covered by fire—can slow the enemy's advance and hold him under friendly fire.

(7) The CO normally plans counterattacks. He plans to drive the enemy off the crest by fire, if possible. But he must also be prepared to drive the enemy off by fire and movement.

5-23. PERIMETER DEFENSE

The rifle company prepares a perimeter defense when there are no friendly units adjacent to it (Figure 5-19). A perimeter defense may be used in a reserve position, in an assembly area or patrol base, on a semi-independent operation, during resupply, or when the company is isolated. The following actions constitute setting up a perimeter defense.

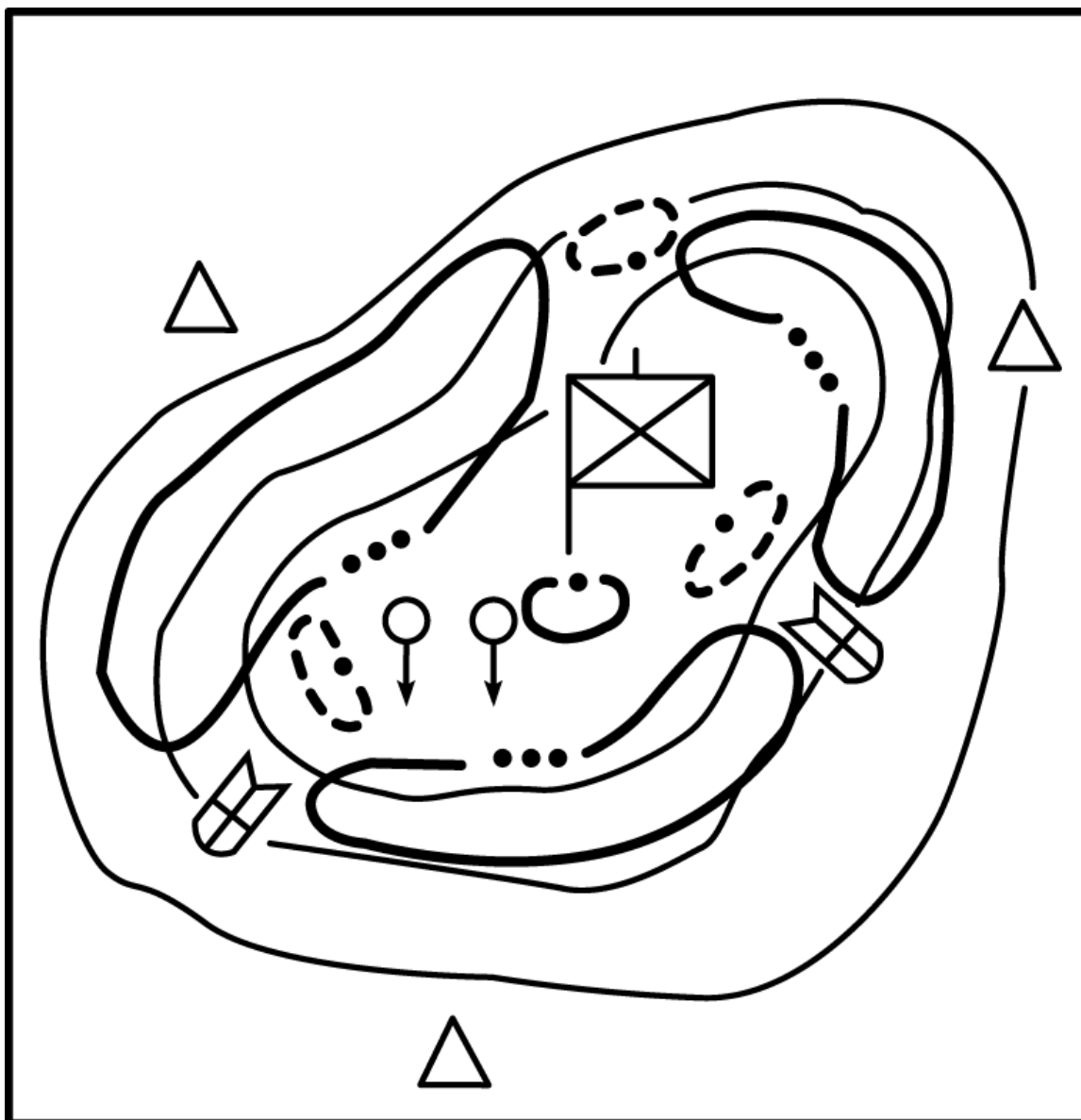


Figure 5-19. Company perimeter defense.

a. Prepare a perimeter defense as any position defense, but disperse the company in a circular configuration for all-round security; its actual shape depends on the terrain. The company must be prepared to defend in all directions.

b. The CO assigns the rifle platoon covering the most likely approach a smaller sector than the other platoons. He prepares alternate and supplementary positions within the perimeter.

c. If available, TOWs and tanks cover armor approaches. They may use hide positions and move forward to fire as the enemy appears. TOWs and tanks should be assigned several firing positions. If there are few positions for them, they are assigned a primary position and are dug in.

d. Keep the mortars near the center of the perimeter so their minimum range (70 meters) does not restrict their ability to fire in any direction. They should be dug in and

have covered ammunition storage bunkers. They communicate by phones (the wire should be buried). The FDC is dug in with overhead cover.

e. Hold at least one rifle squad in reserve. The CO assigns a primary position to the rear of the platoon, covering the most dangerous avenue of approach. It may also be assigned supplementary positions since it must be prepared to fight in all directions.

f. Prepare obstacles and mines in depth around the perimeter.

g. Plan direct and indirect fire as for any type of defense. Plan and use fire support from outside the perimeter when available.

h. Counter enemy probing attacks by area fire weapons (artillery, mortars, Claymores, and grenade launchers) to avoid revealing the location of fighting positions. If the enemy continues to advance, have the machine gunners and riflemen fire.

i. If the perimeter is penetrated, the reserve blocks the penetration and covers friendly soldiers while they move to their alternate or supplementary positions. Even though the company's counterattack ability is limited, it must strive to restore its perimeter.

j. CSS elements may support from within the perimeter or from another position. Supply and evacuation may be by air. Consider the availability of LZs and DZs (protected from enemy observation and fire) when selecting and preparing the position.

k. A variation of the perimeter defense to effectively use the terrain is the Y-shaped perimeter defense. This defense is used when the terrain, cover and concealment, or the fields of fire do not support the physical positioning of the platoons in a circular manner. The Y-shaped perimeter defense (Figure 5-20) is named this because the platoon battle positions are positioned on three different axes radiating from one central point. It is still a perimeter defense because it is effective against an attack from any direction. This defense provides all-round perimeter fires without having to position soldiers on the perimeter. It is most likely to be effective in mountainous terrain, but it also may be effective in a dense jungle environment due to limited fields of fire. All of the fundamentals of a perimeter defense previously discussed apply but some adjustments and special considerations are required.

(1) Although each platoon battle position has a primary orientation for its fires, each platoon must be prepared to reorient to mass fires into the kill zone to its rear.

(2) When there is not a most likely enemy approach identified or during limited visibility, each platoon may have half of its soldiers oriented into the kill zone to the front and half into the kill zone to the rear. Ideally, supplementary individual fighting positions are prepared to allow the soldiers to reposition when required to mass fires into one kill zone.

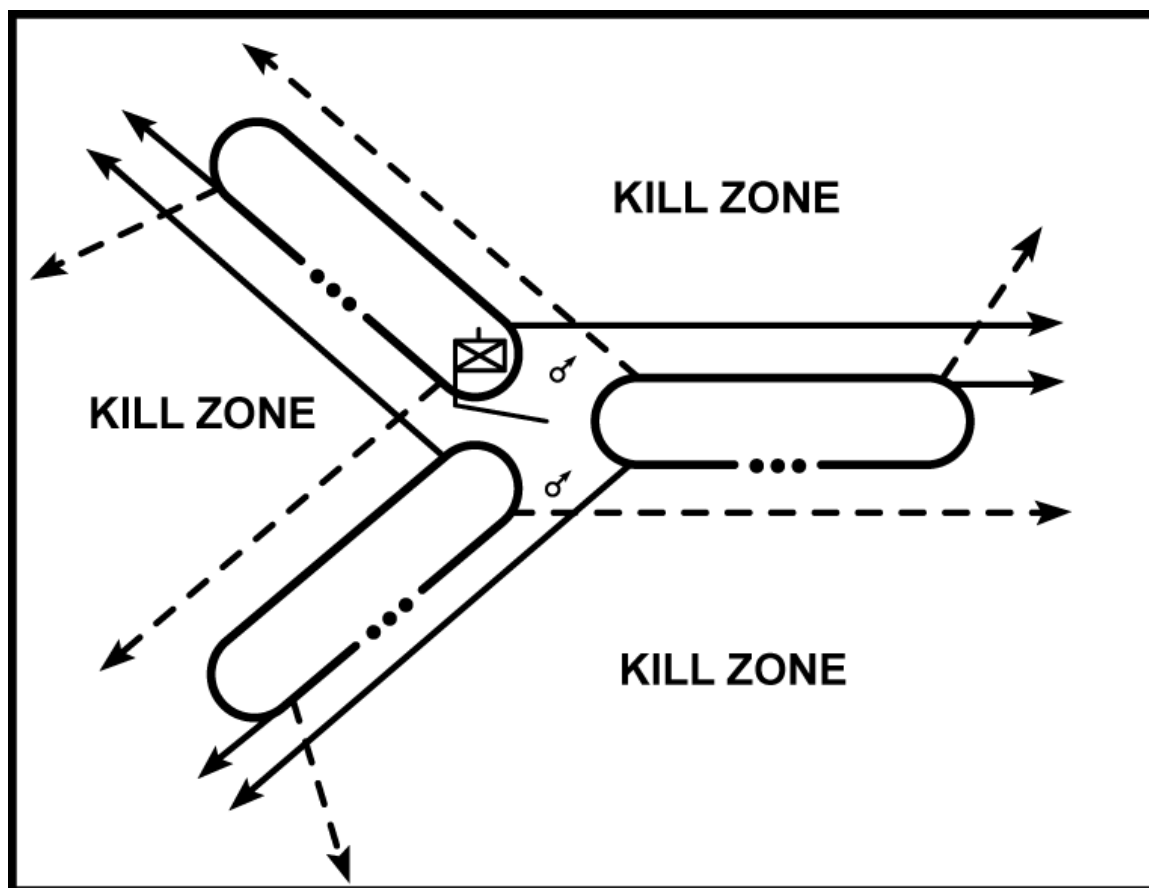


Figure 5-20. Y-shaped perimeter defense.

(3) When a most likely enemy avenue of approach is identified, the CO may adjust the normal platoon orientations to concentrate fires (Figure 5-21). This entails excepting risk in another area of the perimeter. The company security plan should compensate for this with additional OPs, patrols, or other measures.

(4) The positioning of the CP, mortars, a reserve, or any CSS assets is much more difficult due to a lack of depth within the perimeter.

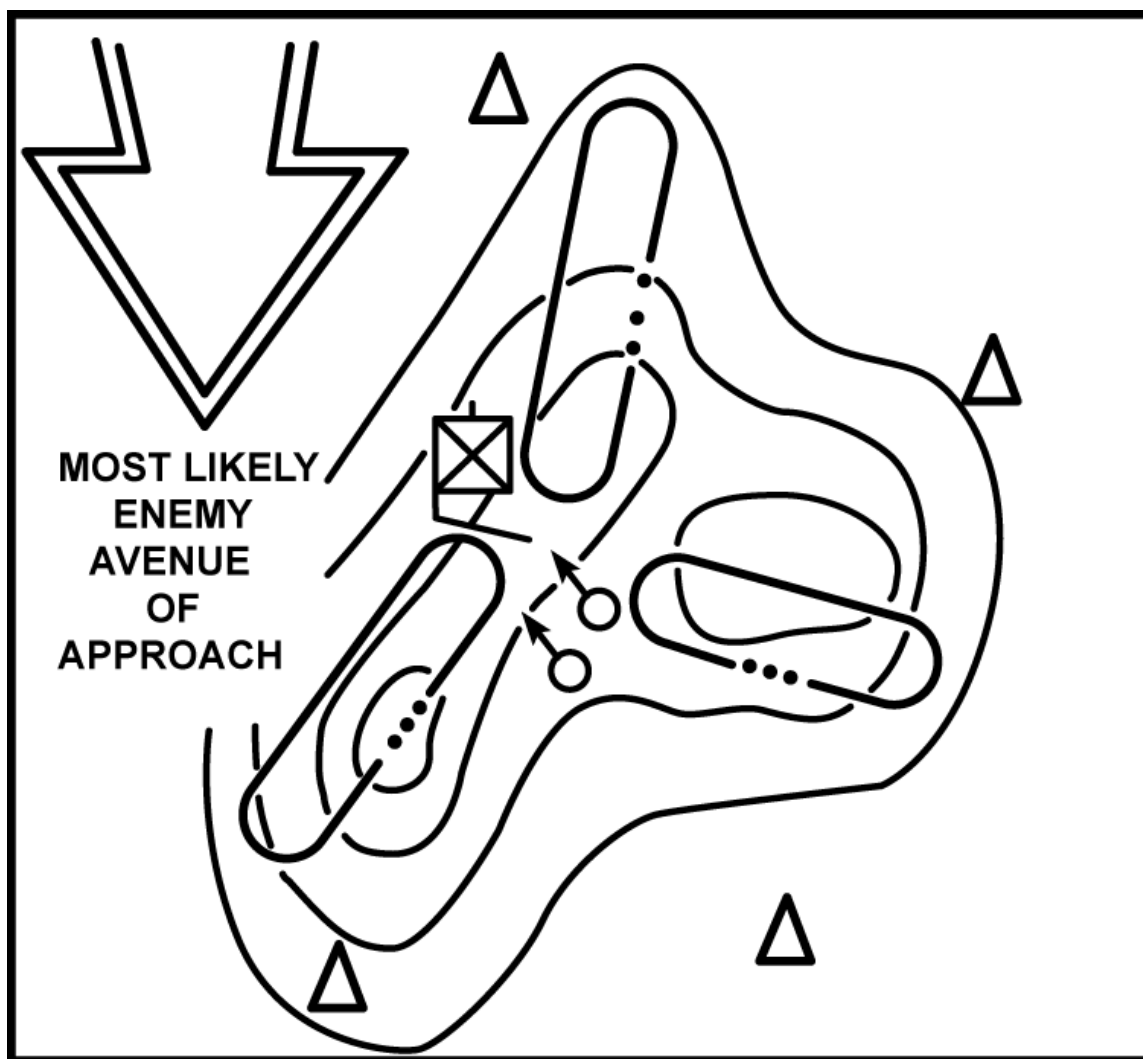


Figure 5-21. Modified Y-shaped perimeter defense.

(5) The most difficult aspect of this type defense is the fire control measures that must be established. To safely fight this defense without casualties from friendly fires, the leaders must ensure the limits of fire for each weapon do not allow fires into the adjacent platoon position. In a mountainous environment this may be simpler due to firing downward into the kill zones. Some measures to consider include:

(a) Position machine guns near the apex of the Y to allow an FPL that covers the platoon front while firing away from the adjacent platoon.

(b) Cover the areas of the kill zones closest to the apex with Claymores, other mines, or obstacles to reduce the need for direct fires in these areas.

(c) Identify those positions at most risk to friendly fires and prepare the fighting position to protect the soldier from fires in this direction.

(d) The loss of one platoon position may threaten the loss of the entire company. Plan and rehearse immediate counterattacks with a reserve or the least committed platoon to prevent this.

(e) Consider allowing the enemy to penetrate well into the kill zones and destroy him as though this was an ambush.

Student Handout 7

Extracted Material from FM 55-30

This student handout contains 25 pages of extracted material from the following publication:

FM 55-30, Army Motor Transport Units and Operations, 27 Jun 1997 w/C1,
15 Sep 1999

Chapter 5	Pages 5-1 thru 5-14
Chapter 6	Pages 6-1 thru 6-11

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 5

CONVOY CONTROL, ORGANIZATION, AND PLANNING

Convoys are planned to organize and control motor movements. They are used for the tactical movement of combat forces; the nontactical movement of logistical units; and the movement of personnel, supplies, and equipment. This chapter contains information on all aspects of convoy operations.

5-1. PLANNING FACTORS. Regardless of the mission, the process of planning and organizing convoys is the same. Mission, enemy, troops, terrain, and time available drive the specific planning factors and influence how the convoy will be controlled. Other factors include:

- The state of training of drivers.
- Types of loads.
- Number of vehicles involved.
- Traffic conditions.
- Quality of road networks.
- Time.

When operating with allied forces, also consider such factors as foreign equipment, cultural differences, and diverse ethnic backgrounds.

5-2. CONVOY CONTROL. Control of motor movements is exercised in two ways. The first type of control is exercised by the unit making the motor movement; this is organizational control. The second is by the commander of the area through which the convoy moves; this is area control.

"Marches are war...aptitude for war is aptitude for movement." Napoleon

a. **Organizational Control.** Organizational control is exercised by the moving unit before, during, and after movement. Effective organizational control requires march discipline. March discipline is a command responsibility that comes from effective organizational control and training. It is essential to the effectiveness of the march column to prevent conflict with other movements in the area. It can only be attained by thorough training, supervision of operations by technically competent leaders, and attention to detail. March discipline demands--

- Using qualified drivers who operate their equipment safely under a variety of driving conditions.
 - Adhering to unit SOPs that specify tactics and techniques for movement, immediate action drills, and communications techniques.
 - Strictly following traffic regulations.
 - Meeting SP, en route CP, and RP times without failure.
 - Following the prescribed route at the prescribed march rate.
 - Halting at rest stops for the required amount of time.

- Effectively using protective measures, including maintaining the prescribed vehicle interval, radio discipline, and blackout driving during night convoys.
- Maintaining proper care of equipment.
- Observing safety policies and regulations at all times.
- Ensuring that drivers obey the rules of the road, traffic laws or regulations, speed limits, and time and distance gaps.

b. **Area Control.** This kind of control is exercised by the commander who controls the area/terrain through which convoys move. Area control is normally exercised through movement control channels and is known as highway regulation. Highway regulation is planned by the DTO for the division rear area, the transportation battalion (MC) for the corps rear area, and the TMCA for the COMMZ. It is supervised by movement regulating teams assigned to the MC battalion and TMCA and by MPs for traffic control.

Division, corps, and theater army traffic circulation plans and highway regulation plans specify the control measures applied to MSRs. Convoy commanders are responsible for ensuring that they follow policies in areas through which they will pass.

Controlling traffic in an area of operations is difficult even under the best of conditions. There will always be competing demands for the available road network. Units cannot expect to be able to use all routes without requesting permission. Highway regulation planners establish control measures to ensure order and prevent congestion.

One method used to establish control is classifying MSRs and ASRs. These classifications are based mainly on the ability of a route to support the expected traffic volume and types of vehicles that will use the route. The classifications specify the degree of control required and whether moving units must submit a movement bid (clearance request) to use a route. The classifications will be specified in the highway regulation plan. There are five route classifications:

- *Open route.* The route is open to all types of traffic and the moving unit does not need to submit a movement bid to use the route.
- *Supervised route.* The route is open to most types of traffic. However, convoys of certain size, vehicles of certain characteristics, and certain slow-moving vehicles may require a movement credit to use the route. The highway regulation plan will specify the size of convoys or types of vehicles that require a movement credit.
- *Dispatch route.* Full control is exercised over a dispatch route. Priorities are set for use of this type route. A movement credit is required for the movement of any vehicle or group of vehicles.
- *Reserved route.* This type route is set aside for the sole use of a certain unit, specified operation, or type of traffic. If a route is reserved for a unit, then the commander of that unit decides how much and what kind of control is required.
- *Prohibited route.* No traffic is allowed over a prohibited route.

5-3. CONVOY ORGANIZATION. A convoy is a column of vehicles that moves from the same origin to destination and is organized for the purpose of control under a single commander. The minimum number of vehicles in a convoy is directed by theater policy, standardization agreement, or the HN. In the absence of policies to the contrary, convoys are considered six or more vehicles. All vehicles normally move at the same march rate.

a. **Convoy Elements.** Vehicles in a convoy are organized into groups to facilitate command and control. A convoy may be as small as a 6-vehicle march unit or as large as a 300-vehicle column. Whenever possible, convoys are set up along organizational lines, such as squad, platoon, company, battalion, and brigade. Convoy elements include march units, serials, and columns (Figure 5-1).

(1) **March units.** A march unit is the smallest element of a convoy. As the smallest subdivision of a column, march units may have up to 25 vehicles assigned. A march unit usually represents a squad- to platoon-size element. Each march unit has a march unit commander.

(2) **Serials.** A serial is a group of two to five march units. It represents approximately a company- to battalion-size element. Each serial has a serial commander.

(3) **Columns.** A column is a group of two to five serials. It represents approximately a battalion- to brigade-size element. Each column has a column commander.

For example, a medium truck company commander can organize his convoy as a serial by dividing the 60 task vehicles by platoons into three march units of 20 vehicles each. The company commander would then serve as the convoy commander and the platoon leaders would serve as march unit commanders. Remaining vehicles would be added to each march unit for command and control and convoy support.

Convoy commanders should not generally subdivide march units of 20 or fewer vehicles into smaller march units because of road space considerations. This will reduce the amount of road space taken up by the gaps between small march units. If the convoy commander determines that security requirements warrant greater separation between convoy elements, he could divide the 60 task vehicles by platoons into three serials of 20 vehicles each and further subdivide each serial by squads into two march units of 10 vehicles each. In this example, the platoon leaders would serve as serial commanders and the squad leaders as march unit commanders.

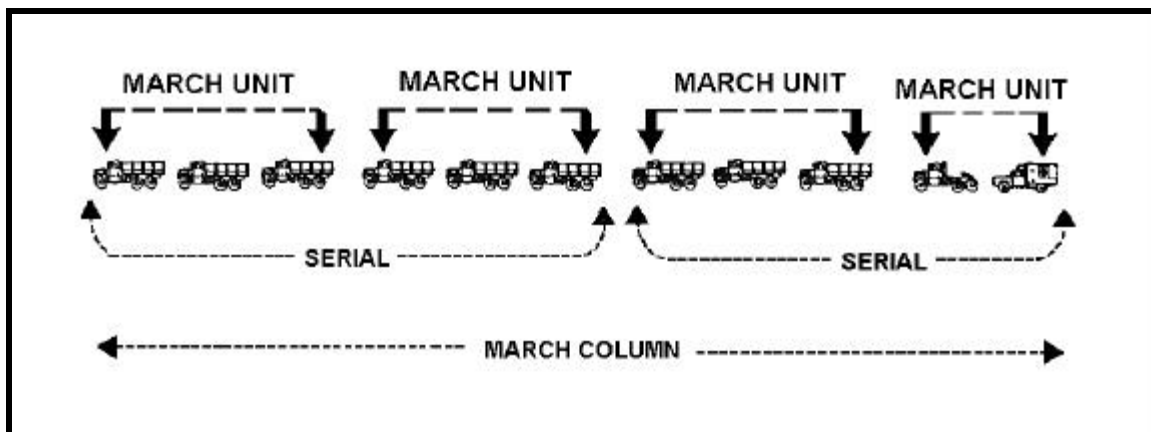


Figure 5-1. Convoy organizational elements

b. **Convoy Sections.** Leaders must know how to position vehicles within the elements. All columns, serials, and march units, regardless of size, have three parts: a head, a main body, and a trail (Figure 5-2). Each of these parts has a specific function.

(1) **Head.** The head is the first vehicle of each column, serial, and march unit. Each head should have its own pacesetter. The pacesetter rides in this vehicle and sets the pace needed to meet the scheduled itinerary along the route. The officer or noncommissioned officer at the head ensures that the column follows the proper route. He may also be required to report arrival at certain checkpoints along the route. With the head performing these duties, the convoy commander has the flexibility to move up and down the column to enforce march discipline.

(2) **Main body.** The main body follows immediately after the head and consists of the majority of vehicles moving as part of the convoy. This is the part of the convoy that may be subdivided into serials and march units for ease of control.

(3) **Trail.** The trail is the last sector of each march column, serial, and march unit. The trail officer/NCO is responsible for recovery, maintenance, and medical support. The recovery vehicle, maintenance vehicles, and medical support vehicles/teams are located in the trail. The trail officer/NCO assists the convoy commander in maintaining march discipline. He may also be required to report clear time at checkpoints along the route. In convoys consisting of multiple march units and serials, the convoy commander may direct minimum support in the trail of each serial or march unit and a larger trail party at the rear of the column. As the trail party may be left behind to conduct repairs or recovery, the convoy commander should provide trail security and communications.

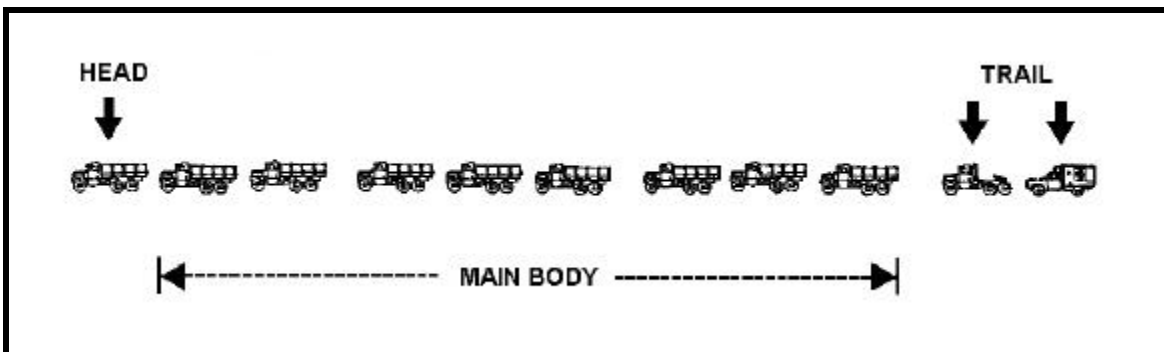


Figure 5-2. Functional elements of a convoy

c. **Vehicle Placement.** Certain factors influence the placement of vehicles in a convoy. The commander should consider the following guidance in placing vehicles within each convoy element:

- Give special attention to vehicles loaded with ammunition and bulk petroleum. Try to separate these vehicles or disperse them throughout the march elements. A larger gap between

vehicles carrying ammunition or bulk petroleum can also be prescribed. Tactically segregate critical supplies to ensure that no one element or capability is lost due to enemy action.

- Position heavier or slower vehicles at the head to assist in maintaining the prescribed convoy speed.
- Place C2 vehicles where they can maintain control of the convoy. Also consider protecting C2 vehicles from enemy action. They are priority enemy targets. Commanders may use an irregular pattern of placing C2 vehicles, or they may use trucks instead of HMMWVs or CUCVs.
- Place maintenance and recovery vehicles at the end of each march unit and at the end of the convoy to recover or make quick repairs to disabled vehicles down along the side of the road.
- When it will not compromise the security of the convoy, locate trucks requiring the longest unloading time at the head of the march element to achieve the fastest turnaround time.

d. **Types of Column Formations.** The column must be organized to meet mission requirements and ensure organizational control. The convoy commander decides how the column will be organized for control, choosing from three basic methods: close column, open column, and infiltration. The difference between the three methods is one of spacing vehicles, or gap. The convoy commander must weigh factors such as the threat, type of route, and ability to communicate in deciding the proper gap for the movement. The gap is determined by the length and speed of the vehicles. The rule of thumb for vehicle gap is to allow a 4-second gap for trucks. If the convoy includes vehicles with trailers, allow an 8-second gap. Normally, the gap will be 25 to 50 meters in urban areas (close column) and 100 meters in rural areas or highways (open column). Table 5-1 (page 5-6) and Table 5-2 (page 5-7) show types of column formations and the gap between vehicles. The number of vehicles (density) per kilometer of road and the rate of march may be changed based on METT-T. For detailed instructions for figuring vehicle gap, see AR 55-29 or FM 21-305.

Drivers are responsible for maintaining the gap between vehicles along the route. Leader and driver training is essential. Helicopters or other aircraft, if available, can assist the convoy commander in maintaining the proper gap. When the pilot informs the convoy commander of how well or poorly drivers are maintaining the gap, the convoy commander can make the necessary adjustments.

5-4. CONVOY PLANNING. When a unit receives a mission or movement order, the unit officers and operations section personnel begin making plans. Most convoy planning should be based on the unit SOP. It should specify the most common planning activities. However, certain requirements must be coordinated outside the moving unit and these require support from the battalion and higher staffs. See Appendix M for information on coordinating active and reserve component convoys in CONUS. See Appendix N for distribution formulas and percentages needed to estimate the axle weight distribution for a loaded vehicle.

The convoy commander must perform specific actions to prepare the convoy. A limited amount of time is available to accomplish the following:

- Select and reconnoiter the route.
- Submit a movement bid if required.
- Effect coordination for en route security.
- Give instructions to subordinate element commanders and other supervisory personnel.
- Inspect personnel and vehicles.
- Brief convoy personnel.

Table 5-1. Types of column formations

TYPE OF FORMATION	WHEN USED	GAP BETWEEN VEHICLES	RATE	ADVANTAGES	DISADVANTAGES
Close	Night, poorly marked routes, congested areas, reduced visibility.	25 to 50 M	15 MPH/ 25 KMPH	Full traffic capacity of road can be used. Control is easier. Fewer guides, escorts, and route markers are needed.	Quick dispersion is difficult. The column is easily detected. May cause congestion at point of arrival. Requires careful scheduling and rigid control to avoid blocking at intersections. Causes driver fatigue.
Open	Daylight, well-marked routes, highways.	100 M	25 MPH/ 40 KMPH	Less chance of enemy observation or damage from attack. Cargo moves faster. Driver's fatigue is reduced. Fewer accidents; very flexible.	Command and control are difficult. Proper vehicle spacing is hard to keep.
Infiltration	Daylight, congested areas, heavy traffic crosses route.		Various	Provides maximum security and deception. High speeds are possible. Other traffic has little effect on individual trucks.	More time required to complete the move. Column control is nearly impossible. Drivers can get lost. Specific details must be given to each driver. Maintenance, refueling, and messing are hard to arrange. Vehicles may bunch up, causing close columns to form. Requires experienced drivers. Orders are not easily changed. The unit cannot be redeployed as a unit until the last vehicle arrives at destination.

Table 5-2. Night column formations

TYPE	GAP BETWEEN VEHICLES	RATE	ADVANTAGES	DISADVANTAGES
Blackout drive	15 to 20 M	5 to 10 MPH/ 8 to 16 KMPH	Limits enemy observation. Darkness provides security.	More vehicles in ambush kill zone. Driver fatigue. Increased time distance.
Lights on drive	50 to 100 M	20 to 30 MPH/ 33 to 50 KMPH	Drivers stay alert. Enemy reaction time reduced. Speed provides security. Less vulnerable to ambush and sniper fire.	Control is harder. Enemy observes the move. May be very vulnerable to enemy air strikes.

Besides convoy control and organization, convoy commanders must consider the following elements during the planning process:

- Advance/quartermen party.
- Convoy control personnel.
- Start points and release points.
- Halts.
- Gaps and march rate.
- Submission of movement bids.
- Communications.
- Route reconnaissance.
- Escort and security elements.
- Convoy support.

a. **Advance/Quartermen Party.** Advance and quartermen parties coordinate convoy arrival at destination. For support missions, the advance party coordinates with the receiving unit for staging vehicles for on-load or off-load, MHE, and security. When a unit relocates, the quartermen party prepares for the arrival of the main body of the convoy. The advance party may travel with the column during the early stages of the move; however, it must arrive at destination sufficiently ahead of the column to perform its mission.

From a convoy control perspective, the major functions of the advance party or quartermen party are to ensure that the column is able to move quickly off the route and into the marshaling or assembly area. It also positions individual vehicles within the marshaling or assembly area. These actions will prevent congestion on the route and enhance security by not allowing vehicles to be lined up along a route waiting to enter the marshaling or assembly area. The advance party must have

enough personnel to accomplish this task. The advance party will also have to secure and sweep the area for contamination or enemy activity if the area is not secured.

b. **Convoy Control Personnel.** Control is exercised by the column commander, serial commanders, and march unit commanders. The advance party officer, trail party officer, pacesetter, and escorts assist the convoy commander in controlling the movement.

(1) **Column, serial, and march unit commanders.** These commanders plan and control the motor movement and enforce march discipline. They may be either officers or noncommissioned officers.

(2) **Pacesetter.** The pacesetter should be an experienced officer or NCO who rides in the first vehicle of each element in the convoy. The pacesetter maintains or adjusts the rate of march necessary to meet the schedule. In so doing, the pacesetter will direct that the convoy speed up to compensate for lost time due to terrain, weather, traffic conditions, or other obstacles. The pacesetter's job is critical as he must ensure the convoy averages the march rate over the length of the route.

(3) **Trail officer.** The trail officer is positioned at the rear of the column. He checks and observes vehicles, march units, or serials at the SP. He ensures that approaching traffic from the rear is warned when the column halts. He also picks up guides and markers left by preceding elements of the march column. He investigates accidents on-the-spot, directs evacuation of injured personnel, and effects disposition of disabled equipment.

(4) **Trail maintenance officer.** A maintenance technician/NCO rides at the rear of the column with maintenance and recovery personnel and equipment and supervises en route maintenance operations. In a small column, the trail officer and the trail maintenance officer may be the same person.

(5) **Guides.** Guides are used to ensure the convoy follows the prescribed route. Guides become very important when operating in an area where road signs are poor or nonexistent. On controlled routes, the area commander may furnish guides to direct units or vehicles moving over these routes. Highway regulation authorities will use movement regulation teams and military police to assist moving units. Although these teams do not normally escort convoys, they assist convoy commanders in locating supported units, preventing conflict with other convoys, and providing other information on the route. On routes that are not controlled, the moving unit is usually responsible for providing its own guides.

c. **Start Points and Release Points.** All motor moves are scheduled from a start point to a release point. For most moves, when all vehicles originate from the same location, selecting an SP is a simple procedure. However, columns are sometimes composed of vehicles from several different units that may not originate at one location. When this occurs, the convoy commander must select an SP that is common to all units and vehicles on the route. Similarly, not all vehicles may have the same final destination. Yet, there must be a place where elements of the column can be released from column control to continue their assignments. This place is the RP.

(1) **Start point.** An SP is the place all elements of a column come under the active control of its commander. On passing the SP, each unit should be traveling at the rate of march and vehicle interval (gap) stated in the operation order. If the convoy is moving on a controlled route, the SP will usually be the first checkpoint on the route that the convoy passes. If the convoy is not

moving on a controlled route, the convoy commander will select an SP along the route that is easily recognized on both map and ground.

(2) **Release point.** The RP is the place where elements of a column are released from the active control of the commander. They leave the column to go to their designated areas. The RP, like the SP, must be on the column's route. If the convoy is moving on a controlled route, the RP will usually be the last checkpoint on the route that the convoy passes. If the convoy is not moving on a controlled route, the RP should be a place along the route easily recognized on both map and ground. The RP is neither the final destination nor a place to stop a convoy. The convoy must clear the RP and get off the route with a minimum of delay to prevent congestion with other scheduled movements. Unit guides may meet their units as they arrive at the RP and lead them to their designated area. Multiple routes and cross-country movements should be used from the RP to allow units to spread rapidly.

If the destination is a customer support location, the convoy commander should use an advance party or other communications to contact the receiving unit before arrival of the main body. This will let the receiving units meet the convoy at the RP and guide the vehicles to where they are needed. It will also facilitate getting the vehicles off the route quickly, so as not to interfere with other scheduled traffic. As the vehicles are unloaded, they should be scattered out, and after-operation maintenance performed. Drivers should be informed as to where and at what time to assemble for the return trip.

d. **Halts.** Halts are made for rest, personal comfort and relief, messing, refueling, maintenance and inspection of equipment, and schedule adjustments. Halts must be incorporated into road movement planning to ensure that the time for the halt is reflected in road movement tables and the movement bid (see Appendix J). Before any convoy, a risk assessment should be accomplished considering such things as time, duration, and cargo to ensure the mission is completed safely.

(1) **Time, duration, and purpose.** Short halts are made for personal comfort and relief, inspection of equipment, and en route equipment checks. Short halts will normally last 10 to 15 minutes. Longer halts, for messing, refueling, and bivouacking, will last as long as required to accomplish these tasks. When the situation permits, messing and refueling halts should coincide. Convoy commanders must remember that the time taken to get in and out of the rest halt is part of the time allocated for the halt.

(2) **Halt procedures.** Use the following procedures at halts:

- Plan for halts in areas with good security and fields of fire.
- Avoid halting on curves or grades.
- Never block the road when conducting halts.
- Maintain the prescribed gap to enhance security.
- Keep civilians away from the convoy vehicles.
- Post road guards at the front and rear of the convoy to warn approaching

traffic.

(3) **Location.** Select the locations for scheduled halts in advance. In most areas of operations, the location of rest halt areas on controlled routes will be centrally selected by commanders exercising area control and published in the highway regulation plan. Some types of rest halts, especially those for refueling, maintenance, and messing, may be established by an ASG

(COMMZ), CSG (corps), or DISCOM to support all convoys passing over the route. No matter who plans rest halt locations, they should offer adequate ingress and egress to get all vehicles in and out, offer dispersion and concealment, and be large enough to accommodate all vehicles and rest halt functions.

(4) **Duties of personnel.** During halts, all personnel have certain responsibilities. Officers and noncommissioned officers check the welfare of their soldiers, the security of loads, and en route maintenance. Control personnel inspect vehicles and loads. They give instructions to ensure that the column will get started with a minimum of confusion. Dining, medical, and maintenance personnel perform such special duties as the purpose and duration of the halt permit. Drivers inspect their vehicles and loads and perform en route maintenance.

e. **Gap and March Rate.** Distance between vehicles (gap) has been mentioned several times in the preceding paragraphs. The commander determines the gap based on the march rate, route, and threat. If the same gap is prescribed for all speeds, then the move will be executed as a fixed column. If the gap between vehicles is regulated to increase or decrease as speeds increase or decrease, the move will be executed by a governed column.

March rate will depend on the condition of the road, the traffic, and the speed of the slowest vehicle. In all cases, the march rate will be less than the legal posted speed limits. Also, various commands specify maximum convoy march rates under various operational conditions. Convoy commanders must be familiar with local command policies.

If a governed column is prescribed, a technique for drivers to determine the correct gap based on speed is the speedometer multiplier. The speedometer multiplier is a specified number (1, 2, or 3) to multiply times speed to determine the correct gap. For example, with a speedometer multiplier of 2, vehicles traveling at 40 kilometers (25 miles) per hour will have a gap of 80 meters (50 yards) between them. The gap will thus vary by speed and the speedometer multiplier. Because the gap changes with speed, drivers must open or close the gap to adjust to changing conditions. The major benefit is safety, to put more distance between vehicles at higher speeds. Even when using the speedometer multiplier, a minimum gap should be set to prevent bunching of vehicles at very low speeds. The governed column method can only be used by a well-trained, thoroughly disciplined unit.

f. **Submission of Movement Bids.** A movement bid is a request for clearance to move on a controlled route, such as an MSR. Movement bids may be required for convoys containing a certain number of vehicles, types of vehicles, or types of loads. Local policy or law determines the requirement to submit a movement bid. In CONUS, DD Form 1265 and DD Form 1266 serve as movement bids. In NATO, STANAG 2154 and STANAG 2155 govern movement bids. A movement credit is an alphanumeric code issued to the moving unit as the approval of the movement bid. In some areas of operation, the moving unit is required to chalk the movement credit on the sides of vehicles. See Appendix M for information on obtaining convoy clearance in CONUS. For information on movement bids in overseas theaters, see FM 55-10.

To complete a movement bid, the convoy commander must calculate the arrive and clear times at the SP, en route CPs, and the RP. The arrive time is the time the first vehicle of the convoy will arrive at an SP, CP, or RP. The clear time is the time the last vehicle of the convoy will clear that SP, CP, or RP. To calculate the arrive and clear times, the convoy commander must understand the various time and distance factors relating to movement. Decisions the convoy commander makes in

organizing the convoy--such as the number of serials and march units, the march rate, and the gaps--will affect the amount of time it takes a convoy to travel over a route. Moving units must carefully plan their movements and submit an accurate movement bid when required. See Appendix J for the necessary formulas.

If the route selected for movement is a supervised or dispatch route, the convoy commander or battalion headquarters should contact the DTO or servicing MC detachment to determine what restrictions and requirements they place on convoys. If a movement bid is required, the convoy commander or battalion staff must complete the bid and submit it in the required time. The DTO or MC detachment commander can also inform the convoy commander of support furnished along the route, such as security, traffic control, maintenance, and fuel. Perhaps most importantly, he can inform the convoy commander about the current threat status along the route.

g. **Communications.** The ability to communicate during convoy operations is essential. Radio nets must be established to link the convoy commander with higher headquarters, air and artillery support, element commanders, any security force commander, gun trucks, medics, and the trail party commander. Within the column, each march element may have its own control net with the march element commander and the head and trail party. Other communications techniques, such as signals, must be established and rehearsed. There are several ways to communicate while on convoy. These include the following:

- *Visual signals.* These may involve arm-and-hand, flashlight, flag, headlight, and pyrotechnic signals. These signals should be specified in an SOP so that drivers are completely familiar with them. Visual signals must be trained and rehearsed.
- *Audio (sound) signals.* These may include the use of whistles, horns, and verbal messages. Aircraft and command and control vehicles may be equipped with loudspeakers to issue instructions.
- *Radio.* This is the best way to communicate during a road march. There are several things to consider about the use of radios:

- Availability of radios is limited within the convoy. Radios are usually limited to command and control vehicles.

- The range of radios is limited unless retransmission stations are established.

- Radio transmissions may not always be allowed under all combat conditions.

Even with newer radios, the volume of radio transmissions and the ability of the enemy to jam may render them unreliable in some circumstances.

h. **Route Reconnaissance.** The decision as to which route to use will depend on routes available under the current highway regulation plan and the ability of routes to support the type of vehicles moving. Often the route will be prescribed by the higher headquarters. In this case, a map reconnaissance will enable the convoy commander and battalion staff to select tentative checkpoints or to confirm those already established. The convoy commander can ascertain critical points and potential ambush sites by contacting the DTO or servicing MC detachment through whose area the convoy will pass. The convoy commander should also conduct either a ground or aerial reconnaissance of the route once the map reconnaissance has been completed. To help them become familiar with the route, subordinate convoy leaders should be included in any reconnaissance. If the reconnaissance shows road or bridge damage, the convoy commander should notify his higher headquarters, which will in turn notify the DTO or MC detachment. The route reconnaissance

should include identification of critical points and check points and the selection of an SP, RP, halt sites, and a bypass or alternate route.

i. **Escort and Security Elements.** Military police units may provide convoy security to a specific convoy or on an area basis. Security of routes is an MP mission. However, the availability of MP support depends on the threat in the area of operations, the sensitivity of the cargo, and other missions the MPs must support. If available, escort and security elements are used to secure and protect the convoy from enemy activity. Convoy escort and security elements are usually the responsibility of the moving unit. However, the MPs may provide them on a mission basis contingent upon the threat and importance of the convoy. Convoy commanders must request MP support through command or movement control channels. If MP support is approved, convoy commanders must closely coordinate with the MP unit directed to provide support. The presence of MPs or other escorts does not relieve the convoy commander from responsibility for the security of his convoy. Convoy commanders must plan and coordinate through their chain of command all matters pertaining to convoy security. These include the following:

- Noise, litter, and light discipline.
- Front, flank, and rear security.
- Security during halts.
- Air cover.
- Fire support.
- Communications security.
- Deception.

A convoy may be provided MP or combat force escorts. In placing escorts, the commander must consider the number of vehicles available, the size of the convoy, terrain and route characteristics, and likely enemy activity. Escorts should be placed to allow maximum protection for the most critical convoy elements. Since it is easier for vehicles to move forward, some escort vehicles must be positioned in the rear of the march element to which they are attached. If only one escort vehicle is provided, it should be placed to the rear of the convoy so it can be brought forward in the event of a tactical emergency.

j. **Convoy Support.** Based on the mission and circumstances of the move, support to convoys may include any of the following: fire support, combat aviation support, messing en route, maintenance en route, refueling en route, and medical support en route.

(1) **Fire support.** As a rule, convoy commanders do not coordinate fire support. Convoy fire support is planned and coordinated by a fire support element on an area basis (such as a base operations center, base cluster operations center, or rear area operations center). This planning may provide fire support to MSRs or other routes if intelligence indicates that the enemy will likely target convoys at particular locations. Fire support assets will usually be employed only against Level III threats. Convoy commanders should know the fire support plans along their route and know how to call for and adjust fire. For more information, refer to FMs 6-30 and 6-20-30. Convoy commanders must know call signs, frequencies, and other signal operating instructions.

(2) **Combat aviation support.** Another element of fire support that should be considered is Army attack helicopters. Through coordination, attack helicopters can be on alert status or overhead while the convoy is en route. In either situation, their radio frequencies must be

known to convoy and security radio operators and control personnel (FM 24-18). Steps must also be taken to standardize markings of convoy vehicles to prevent fratricide.

(3) ***Messing en route.*** While on convoy, drivers can be fed by their organizational field feeding capabilities or by transient messes. For organizational mess, the convoy commander uses organic capabilities to feed, such as an MKT or MREs. The ASG or CSG may establish transient field feeding sites along the MSRs.

(4) ***Maintenance en route.*** En route maintenance is performed by the driver and by mechanics in the trail element when the repairs are beyond the driver's capability. Drivers always perform normal preventive maintenance at halts. Maintenance personnel in the trail element are used to carry out all unit-level repairs on vehicles of the convoy. If the vehicle can be repaired quickly, then attempt the repair. If it cannot be repaired quickly or there is doubt, the vehicle should be towed or recovered and the march continued. Vehicles undergoing repairs or those that are to be abandoned or destroyed will be moved off the road. When a vehicle is disabled during a convoy, the following procedures should be observed:

- Driver pulls disabled vehicle to the right of the road and signal the convoy to pass.
- Assistant driver and any passengers dismount and take up defensive positions.
- Driver tries to repair the vehicle.
- Trail officer notifies the convoy commander of the disabled vehicle and recovers or destroys it depending on the tactical situation.
- Limit recovery vehicle recovery operations to only those situations where a tow bar will not work. Use tow bars when possible.
- Do not obstruct roads during recovery operations.
- Do not destroy equipment unless directed through command channels or as a last resort to prevent enemy capture.

(5) ***Refueling en route.*** The requirement for refueling is based on the normal operating range of convoy vehicles. The operating range is the normal distance that a vehicle can travel on a full tank of fuel. Operating range varies according to the terrain, vehicle, and load. A heavily loaded truck operating on poor roads in hilly terrain will get less fuel mileage than a lightly loaded truck operating on good roads in fairly level terrain. In determining when to refuel, use the vehicle with the least operating range. This will prevent any vehicle in the convoy from running out of fuel.

(6) ***Medical support en route.*** The convoy commander must consider medical support based on the mission and likelihood of enemy contact. Medical support can be provided by unit personnel trained as combat life savers, by attachment of a medical team to the convoy by higher headquarters, or by the area commander. Normally, MEDEVAC frequencies are established for emergencies in the SOI.

5-5. UNIT SOP. A complete SOP facilitates planning. At company level, SOPs should conform with those prepared by the next higher headquarters. At a minimum, the SOP should cover the following subjects:

- Duties of the convoy commander and other convoy control personnel.
- Convoy organization.
- Weapons and ammunition to be carried.
- Hardening of vehicles.
- Protective equipment to be worn.
- Preparation of convoy vehicles; for example, information on tarpaulins, tailgates, and windshields.
- Counterambush actions.
- Operations security measures.
- Immediate action drills.
- Actions during scheduled halts.
- Maintenance and recovery of disabled vehicles.
- Refueling and rest halts.
- Communications.
- Actions at the release point.
- Reporting.

5-6. PREPARING VEHICLES FOR CONVOY. This paragraph discusses the responsibilities of key personnel, as well as the elements needed, in preparing vehicles for convoy.

a. **Command Responsibilities.** The commander of the moving unit is responsible for the mechanical condition of his vehicles. Leaders must inspect all vehicles according to appropriate TMs before departing for the mission. Convoy commanders should also ensure that--

- Additional fuel, water, and lubricants are provided for en route requirements.
- Loads are inspected.
- Tarpaulin, troop safety straps, and end curtains are provided when required.
- Vehicles are hardened when required.
- Columns are identified with appropriate markings.
- Weapons are inspected.

b. **Marshaling or Assembly Area Inspection Teams.** A technique for large unit movements is to establish marshaling area or assembly area inspection points. As convoys are ready to depart, they proceed to the inspection point for final checks and driver briefings. Unit level maintenance personnel may be available to assist unit leadership in correcting last-minute minor deficiencies. Trucks with major problems will be returned to the parent unit and replaced with serviceable vehicles.

c. **Hardening Vehicles.** Cover the cargo bed of troop-carrying vehicles with at least a double interlocking layer of sandbags. Cover the cab floor of all vehicles with a double layer of sandbags under the driver's seat. Take care not to hamper pedal movement or hamper the driver's access to them. As an additional precaution, place a heavy rubber or fiber mat over the sandbags to reduce danger from fragments such as sharpened stones, sand, and metal parts of the vehicle. This also prolongs the life of sandbags. Sandbags may also be placed on the fuel tank, fenders, and hood. See Appendix O for more information on vehicle hardening.

CHAPTER 6

CONVOY DEFENSE TECHNIQUES

The motor transport commander must ensure that his troops are trained in convoy defense techniques. The payoff is reduced vulnerability to hostile action and successful mission accomplishment. The damage a convoy incurs when attacked depends on the adequacy of convoy defense training. It also depends on the adequacy of the briefing that convoy personnel receive before the operation (Appendix Q).

Some elements of convoy defense training are routine. The key is to train to react rapidly to any situation. Successful accomplishment of your mission and your life depend on it.

This chapter covers a broad range of convoy defense techniques to be employed against a variety of threats. Keep in mind that Chapter 3 discussed the threat

6-1. AIR ATTACK. The air threat varies from UAV, cruise missiles, and armed helicopters to high-performance aircraft. Convoys face the greatest danger of an air attack while moving along open roads or during halts where there is little or no overhead cover.

An air attack is a type of ambush. Accordingly, many of the procedures used during a ground ambush also apply to the air attack. For example, the convoy commander must--

- Prescribe alarm signals (unit SOP) (see FM 44-3 for more information on alarms).
- Give instructions for actions to take when under attack.
- Prescribe actions to take in the absence of orders.
- Ensure that defense procedures are rehearsed.
- Review the procedures with convoy personnel before the convoy moves out.

The convoy commander should remember that enemy pilots will seek out and try to surprise the convoy. They will fly at a low, terrain masking altitude. If they attack from higher than 350 meters, small arms fire will have no effect against them, but air defense weapons can be used against them effectively. Enemy pilots will also fly at high speed to make air defense weapons and small arms fire less effective.

a. **Active Defense.** The amount of fire a logistical convoy can bring to bear on attacking aircraft is extremely limited. It is limited to the number of vehicles with mounted machine guns and the individual weapons of operators and passengers. Although the convoy is not totally defenseless, it is no match for a skilled pilot in a modern ground attack jet aircraft. The convoy's capability to defend itself is slightly better against the slower and sometimes more vulnerable ground attack helicopter. At best, the convoy without air defense protection is extremely limited in its ability to defend against air attack.

The key to effective small arms fire against aircraft is volume. Put up a large volume of fire with small caliber weapons. Volume small arms fire comes from knowing the effectiveness of small arms fire on low-flying aircraft. Training ensures accuracy and builds confidence.

(1) **Firing positions.** Except for the prone position, the riflemen's basic firing stances stay the same (Figure 6-1). Firing at aircraft from the prone position means the firer is lying on his back, aiming his rifle into the air. Maximum use of cover and concealment is essential. A crew served weapons gunner should fire from a protected position if possible. He needs to get the weapon up in the air. He can hold it up or use a support for his arms and the weapon. In a real emergency, another soldier can act as a hasty firing support.

(2) **Tips for small arms defense.** The following are tips for small arms defense:

- Shoot any attacking aircraft or unauthorized UAV.
- Fire at the nose of an aircraft; fire at the fuselage of a hovering helicopter or slightly above the nose of a moving helicopter.
- Fire in volume--everybody shoots.
- Lead aircraft crossing your position (M16 and M60 lead jets the length of one football field).
- Take cover if time allows.
- Support your weapon if possible.
- Lie on your back if caught in the open.
- Aim mounted machine guns slightly above the aircraft nose for head-on targets.
- Control small arms fire so attacking aircraft flies throughout it.

b. **Passive Defense.** For a logistical convoy, normally without significant air defense firepower, passive measures are most effective. The key is to prevent attacks by hostile aircraft.

(1) **Dispersion.** The formation used by the convoy is a type of passive defense. The convoy commander must decide whether to use an open or closed column. The distance between vehicles must not be fixed. It should vary from time to time during a march. Factors influencing selection of the best vehicle distance include:

- Mission.
- Cover and concealment along the route.
- Length of the road march.
- Type of road surface.
- Types of vehicles.
- Nature of cargo.
- Enemy threat (ground and air).
- Available defense support.
- Small arms potential.

(2) **Open column.** Open column convoys generally maintain an 80- to 100-meter distance between vehicles. This formation offers an advantage of fewer vehicles damaged by air-to-ground rockets, cannons, or cluster bomb units. However, open columns make control more difficult for the convoy commander when it is necessary to give orders to stop, continue, disperse and seek concealment, or engage aircraft. The column may be more susceptible to attack. It is exposed for a

longer period and, if attacked, its defense is less effective since its small arms fire is less concentrated.

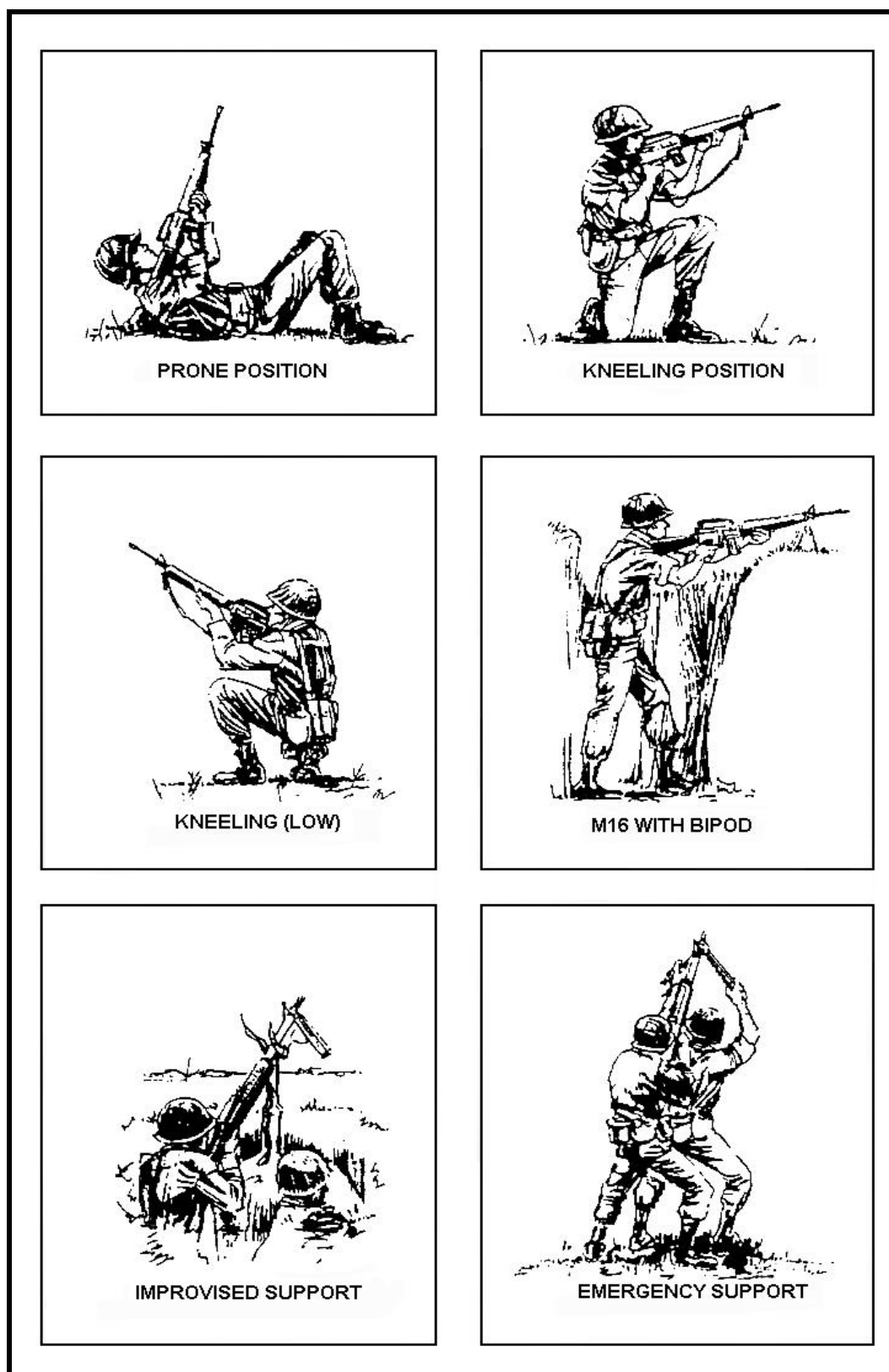


Figure 6-1. Firing positions

(3) **Close column.** Close columns maintain a distance of less than 80 meters between vehicles. This formation has none of the disadvantages noted for the open column formation. However, presenting a bunched up target could be an overriding disadvantage. Where an air attack is likely, it may be wise for the convoy commander to move close column convoys only at night.

(4) **Camouflage and concealment.** Camouflage and concealment techniques can make it more difficult for the enemy to spot the convoy. Not much can be done to change the shape of a vehicle moving down the road, but the type of cargo can be disguised or concealed by covering it with a tarpaulin. Bulk fuel transporters (tankers) are usually priority targets. Rigging tarps and bows over the cargo compartment conceals the nature of the cargo from the enemy pilot. The following are other effective passive measures:

- The operator should look for a bush, tree, or some other means of concealment to break the shape as seen from the air (Figure 6-2).
- Smooth surfaces and objects, such as windshields, headlights, and mirrors, will reflect light and attract the pilot's attention. Camouflage or cover all shiny items before the convoy moves out.
- If vehicles are not already painted in a pattern to blend with the terrain and to break the outline, mud can be used to achieve this effect.

(5) **Air guard duties.** Assign air guard duties to specific individuals throughout the convoy, and give each specific search areas. If the road march lasts more than an hour, soldiers should take shifts at air guard duty. Scanning for a long period dulls the ability to spot aircraft. Seeing the enemy first tips the odds in favor of the convoy, giving it time to react. See FM 44-3 for search and scan procedures.

(6) **Communications security.** Today's communications equipment can be very useful for controlling convoys, but it can also help enemy pilots find you. Use the radio only when necessary and be brief. See Appendix S for added COMSEC precautions.

c. **Passive Reactions.** When aircraft are spotted or early warning is received, the convoy commander has three options: stop in place, continue to march, or disperse quickly to concealed positions (Figure 6-3, page 6-6).

If the convoy commander chooses to halt the convoy, the vehicles simply pull to the shoulder of the road in a herringbone pattern. This technique has several advantages:

- It is harder for the enemy pilot to see the convoy when it is halted than when it continues to move.
- It is easy to continue the march after the attack.
- The volume and density of organic weapons will be higher than if the convoy disperses.

A disadvantage to this option is that a convoy stopped on the open road makes a good target and an enemy attack has a better chance of causing greater damage to the unit.

The mission and/or terrain may dictate that the march continue. If this is the case, convoy speed should be increased. Continuing the march offers the advantage of presenting a moving target, making it more difficult for the enemy to hit. However, detection is easier and volume and density of small arms fire are reduced.

A simple technique to disperse vehicles is to establish a method in the SOP that, in the event of an attack, odd-numbered vehicles go to the left and even-numbered vehicles go to the right. The key to dispersion is not to make two straight lines out of what was one long line; the vehicles must be staggered (Figure 6-4, page 6-6). This should not be much of a problem if the drivers have been trained to go to trees, bushes, folds in the ground, and so forth, that will give concealment. Once the convoy is dispersed, all personnel, except for vehicular-mounted weapon gunners, dismount and take up firing positions.

Advantages of this option are that it is more difficult for the enemy pilot to detect the vehicles and get multiple hits. However, this method has several disadvantages:

- It is easier for the enemy pilot to spot the convoy as it begins to disperse.
- The volume and density of small arms fire are reduced.
- It takes longer to reorganize the convoy after the attack.

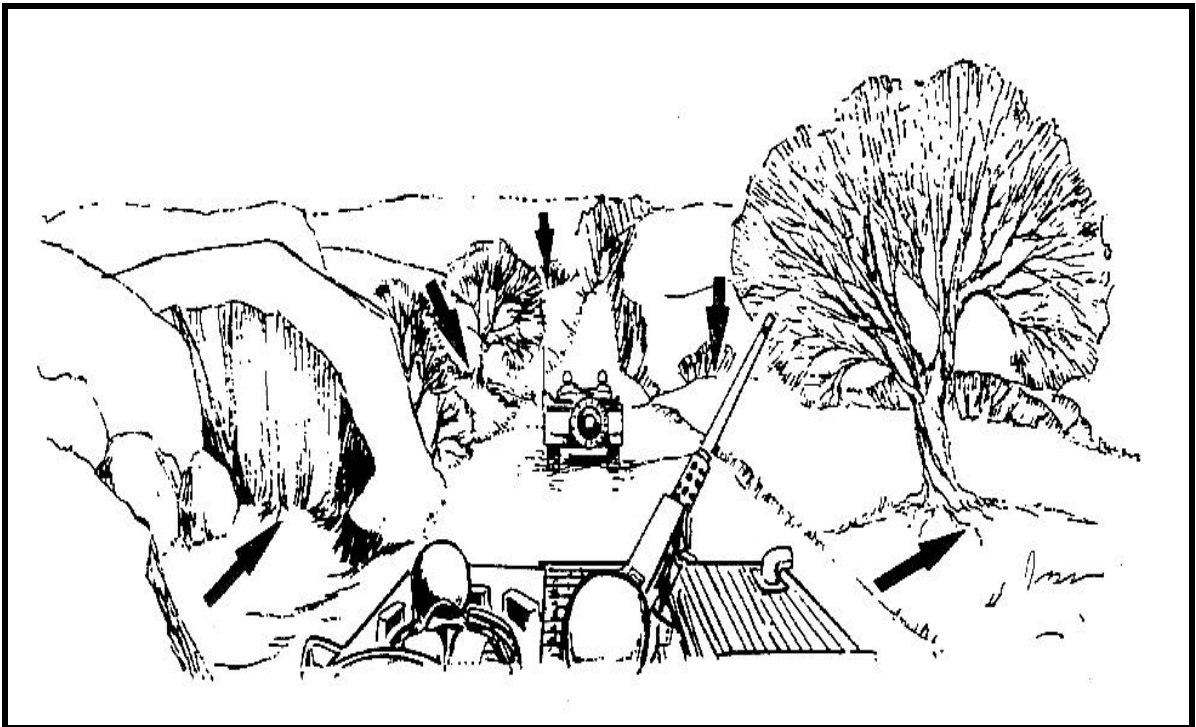


Figure 6-2. Dispersing vehicles seek cover for protection against air observation

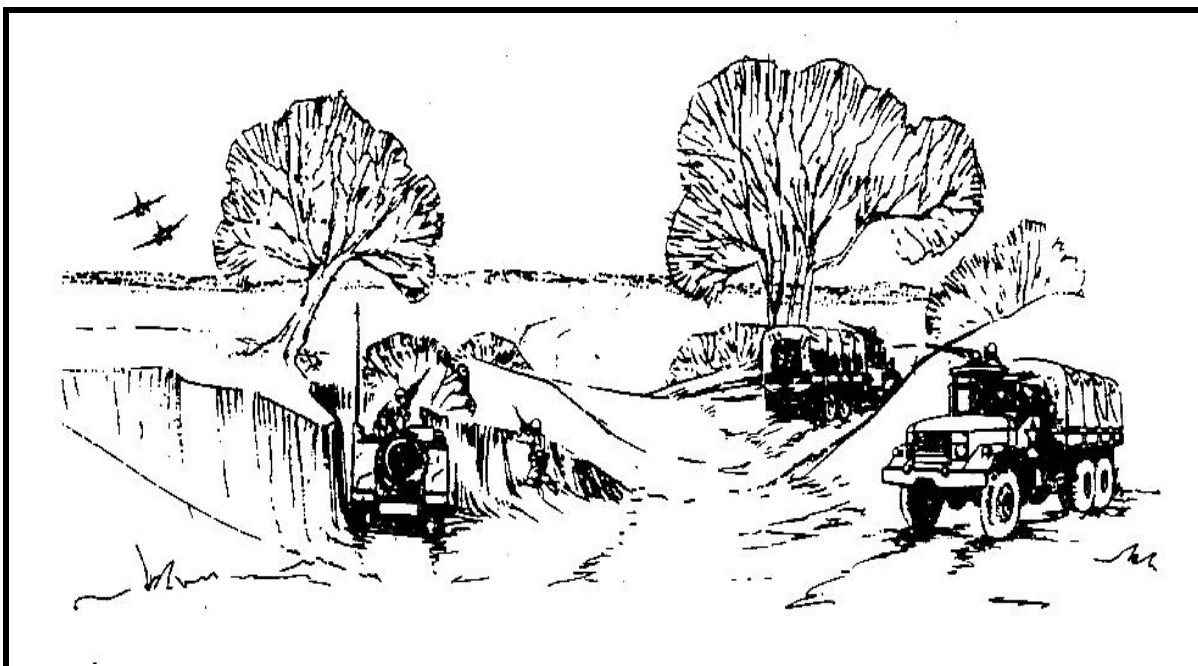


Figure 6-3. Dispersed vehicles in concealed positions

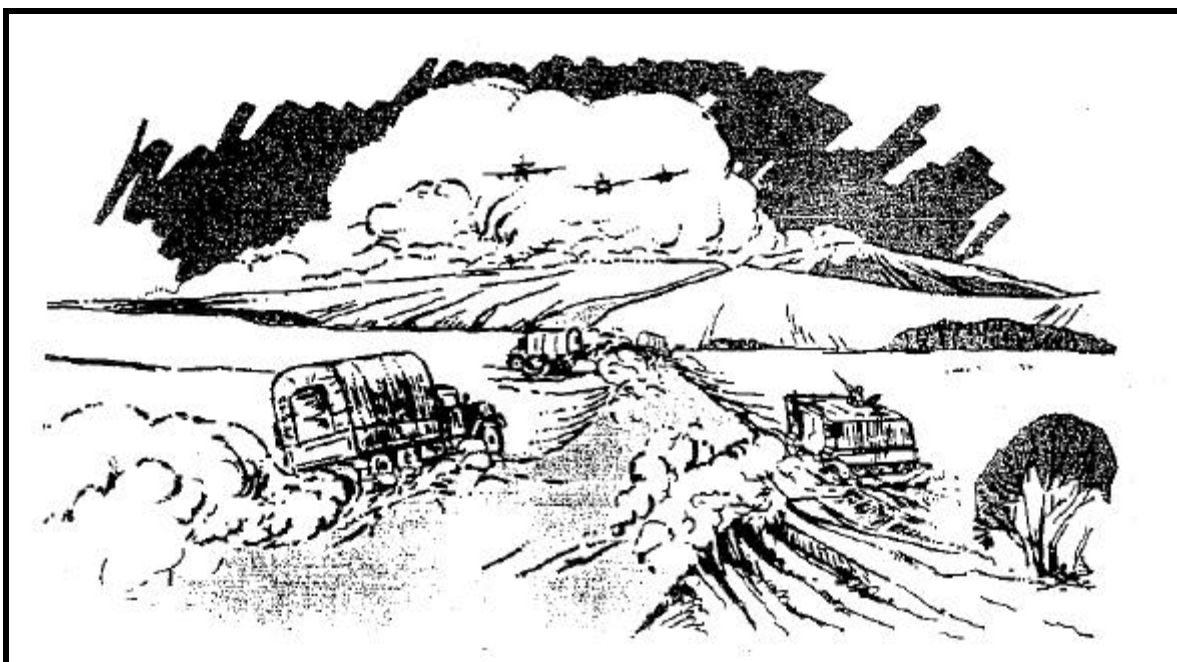


Figure 6-4. Vehicles moving to dispersed positions on road shoulders

6-2. ARTILLERY OR INDIRECT FIRE. Enemy artillery units or indirect fire weapons may be used to destroy logistical convoys or to harass and interdict the forward movement of supplies and personnel. Artillery fires are either preplanned fires or fires called in and adjusted on a target of opportunity by a forward observer. Of the two, the adjusted fires present the most complex problem as the artillery barrages can be adjusted to follow the actions of the convoy.

a. **Active Defense.** Active defensive measures against artillery are extremely limited but must not be overlooked. Active measures include--

- Directing counterbattery fire if the direction and approximate distance to the enemy artillery can be estimated.
- Directing small arms fire or artillery fires against the enemy FO if he can be located.
- Coordinating air strikes against the enemy artillery.

b. **Passive Defense.** The formation in which the convoy moves can be a type of passive defense. See the discussion of open and closed convoys under Passive Defense for Air Attacks. The convoy commander has three options when confronted with incoming artillery rounds: halt in place, continue to march, or disperse quickly to concealed positions. Regardless of the option selected, the actions to be taken and the signal directing the action should be covered in the unit SOP. The primary consideration is the immediate departure from the impact area.

The convoy should only be halted when the artillery concentration is ahead of the convoy. The convoy commander should look for an alternate route around the impact area and the convoy should remain prepared to move out rapidly.

The mission or terrain may require the convoy to continue. If this is the case, increase speed and spread out to the maximum extent the terrain will allow. Casualties can be reduced by avoiding the impact area, increasing speed, wearing protective equipment, using the vehicle for protection, and increasing dispersion.

6-3. SNIPER FIRE. Take extreme caution when sniper fire is received to ensure that any return fire does not harm friendly troops or civilians in the area. The best actions are passive. Ensure all personnel wear Kevlar helmets and available body armor at all times. All vehicles should move through the area without stopping. Escort personnel should notify the march element commander by giving a prearranged signal, like a smoke grenade thrown in the direction of fire, and attempt to locate and destroy the sniper by long-range fire if in a free-fire zone.

NOTE: Prevent convoy personnel from random firing by designating personnel to return fire. Do not return fire in a no-fire zone.

The convoy commander may order additional fire or supporting forces into the area to destroy, capture, or drive off the sniper. Convoy personnel should be aware that a heavy volume of fire is frequently used by the enemy to slow down a convoy before an ambush.

NOTE: Remember all details so the incident can be reported to higher headquarters.

6-4. AMBUSH. This paragraph provides guidance in developing and employing counterambush tactics and techniques. The very nature of an ambush--a surprise attack from a concealed position--places an ambushed unit at a disadvantage. Combat situations may prevent a convoy from taking all the measures necessary to avoid being ambushed. Therefore, a convoy must take all possible measures to reduce its vulnerability. These are passive measures supplemented by active measures taken to destroy or escape from an ambush. For information on the types of ambushes, see FM 21-75.

No single defensive measure, or combination of measures, will prevent or effectively counter all ambushes in a situation. The effectiveness of counterambush measures is directly related to the state of training of troops and the leadership ability of the leaders.

The best defense is to avoid being ambushed. Take the following actions to avoid an ambush:

- Select the best route for your convoy.
- Make a map reconnaissance.
- Make a ground reconnaissance.
- Make an aerial reconnaissance.
- Obtain current intelligence information.
- Use OPSEC to deny the enemy foreknowledge of the convoy.
- Do not present a profitable target.
- Never schedule routine times or routes.

Take the following actions to reduce the effectiveness of ambushes:

- Harden vehicles.
- Cover loads.
- Space prime targets throughout the convoy.
- Wear protective clothing.
- Use assistant drivers.
- Carry troops and supplies.
- Use prearranged signals to warn the convoy of an ambush.
- Use escort vehicles (military police, tanks, armored vehicles) or gun trucks.
- Thoroughly brief all convoy personnel on immediate action drills.
- Practice immediate action drills.
- Maintain the interval between vehicles.
- Move through the kill zone, if possible.
- Stop short of the ambush.
- Do not block the road.
- Rapidly respond to orders.
- Aggressively return fire.
- Counterattack with escort vehicles.
- Call for artillery support.
- Call in TACAIR support.
- Call for the reserve force.

- In the event of ambush during night convoy operations under blackout drive, turn on service drive lights and increase speed to clear the ambush area. Be aware that drivers wearing night vision goggles will be temporarily blinded when service drive is turned on.

a. **Road Not Blocked.** Guerrillas are seldom able to contain an entire convoy in a single kill zone. This is due to the extensive road space occupied by even a platoon-size convoy and because security or lack of available forces may limit the size of the ambushing force. More often, a part of a convoy is ambushed--either the head, tail, or a section of the main body. That part of the convoy that is in the kill zone and receiving fire must exit the kill zone as quickly as possible if the road to the front is open. Vehicles disabled by enemy fire are left behind or, if blocking the road, pushed out of the way by following vehicles. Armored escort vehicles must not block convoy vehicles by halting in the traveled portion of the road to return fire.

Vehicles that have not entered the kill zone must not attempt to do so. They should stop and personnel should dismount, take up a good defensive position, and await instructions. Since escort vehicles may have left the road to attempt to overrun a hostile position, elements of the convoy should not fire on suspected enemy positions without coordinating with the escort forces.

Other actions that convoy personnel can take to neutralize the ambush force include:

- Call for artillery fire on enemy positions.
- Call for gunship or tactical air or army aviation fire on enemy positions.
- Direct gun trucks and other vehicles mounted with weapons to lay down a heavy volume of fire on the ambush force.
- Call for reaction forces.
- Direct all nondriving personnel to place a heavy volume of fire on enemy forces as rapidly as possible as vehicles move out of the kill zone.

NOTE: Vehicles must keep their distance to reduce the number of vehicles in the kill zone.

A motor transport convoy with a limited escort is seldom able to defeat a hostile force and should not attempt to do so. When part of the convoy is isolated in the kill zone, vehicles that have not entered the ambush area must not attempt to do so. They should stop; personnel should dismount, take up a good defensive position, and await instructions until supporting forces have cleared the ambush. Normally, a transport unit will not deploy to attack a hostile force unless it is necessary to prevent destruction of the convoy element. It relies on supporting air, artillery, escorts, and reaction forces.

b. **Road Blocked.** When an element of a convoy is halted in the kill zone and is unable to proceed because of disabled vehicles, a damaged bridge, or other obstacle, personnel will dismount, take cover, and return a maximum volume of fire on enemy positions. When dismounting, exit the vehicle away from the direction of enemy fire. Security/escort troops from vehicles that have passed through the ambush area dismount and lay down a base of fire on the ambush position. Reaction forces should be called in as soon as the ambush attack is launched. When a security escort is provided and a combat emergency arises, the escort commander has operational control of the security element to attack and neutralize the hostile force. Normally, the security force will take action to neutralize the ambush while the convoy escapes from the kill zone. In an ambush situation, immediate reaction and aggressive leadership are essential to limit casualties and damage to vehicles, cargo, and personnel. If immediate air or artillery support is available, personnel will be restricted to a specified distance from the road to avoid casualties from friendly fire. In this situation, personnel

in the kill zone establish a base of fire, while others take up defensive positions away from their vehicles and wait while supporting fire is called in on the enemy positions. Fire in the kill zone may be from only one side of the road with a small holding force on the opposite side. To contain the convoy element in the kill zone, mines and booby traps are frequently placed on the holding force side. The security escort must take care in assaulting the main ambush force as mines and booby traps are commonly used to protect its flanks.

When the enemy is dislodged, the road must be cleared and convoy movement resumed as soon as possible. Wounded personnel are evacuated using the fastest possible mode. When disabled vehicles cannot be towed, their cargo should be distributed among other vehicles if time permits. When it is not feasible to evacuate vehicles and/or cargo, they will be destroyed upon order from the convoy commander. If at all possible, radios and other critical items will be recovered before the vehicles are destroyed. Under no circumstances will they be allowed to fall into enemy hands.

c. **Mines and Booby Traps.** Mines and booby traps are frequently part of an ambush. Command-detonated mines are often used to start an ambush. Mines will also be planted along the shoulder of the road for harassment and interdiction. A booby trap system may be used against personnel in vehicles and could consist of hand grenades. Claymore mines or artillery shells may be suspended from trees and command-detonated when a vehicle passes.

The following guidelines have proven effective in decreasing damage by mines in convoy operations:

- Track the vehicle in front.
- Avoid driving on the shoulder of the road.
- Whenever possible, do not run over foreign objects, brush, or grass in the road.
- Avoid fresh earth in the road.
- Watch local national traffic and the reactions of people on foot. (They will frequently give away the location of any mines or booby traps.)
- When possible, arrange for the engineers to sweep the road immediately before the convoy is scheduled to move over it.
- Use heavy vehicles such as tanks to explode small mines when deployed in front of the convoy.
- Harden vehicles.
- Wear protective equipment.

6-5. NUCLEAR, BIOLOGICAL, OR CHEMICAL ATTACKS. Chemical agents can be disseminated by artillery fire, mortar fire, rockets, missiles, aircraft spray bombs, grenades, and land mines. Always be alert because agents may already be present on the ground or in the air. Chemical agents are substances in either gaseous, liquid, or solid form. To protect against an NBC attack, you need to know how those agents may affect your body if they are used against you. Take defensive actions according to local directives and SOPs. For detailed information on defense against NBC warfare, see FMs 3-4, 3-5, and 3-100.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix C - Practical Exercises and Solutions

PRACTICAL EXERCISE(S)/SOLUTION(S) FOR LESSON 1: W325 version 2

PRACTICAL EXERCISE 1

Title	SQUAD TACTICAL OPERATIONS												
Lesson Number / Title	W325 version 2 / SQUAD TACTICAL OPERATIONS												
Introduction	To win on the battlefield you must know your duties and responsibilities as a leader. This knowledge will enable you to ensure that your soldiers complete all tasks accurately and in a timely manner.												
Motivator	This practical exercise will help you reinforce what you learned.												
Learning Objectives	<p>NOTE: The instructor should inform the students of the following Enabling Learning Objectives covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will:</p> <table border="1"> <tr> <td>Action:</td><td>Identify convoy planning considerations.</td></tr> <tr> <td>Conditions:</td><td>As a small unit leader in a company or battalion-level unit, in a classroom environment.</td></tr> <tr> <td>Standards:</td><td>Identified convoy planning considerations by correctly answering questions pertaining to the subject matter IAW FM 55-30 p 5-5, para 5-4.</td></tr> </table> <table border="1"> <tr> <td>Action:</td><td>Identify convoy defense measures IAW FM 55-30.</td></tr> <tr> <td>Conditions:</td><td>As a small unit leader in a company or battalion-level unit, in a classroom environment.</td></tr> <tr> <td>Standards:</td><td>Identified convoy defense measures by correctly answering questions pertaining to the subject matter IAW FM 55-30, pp 6-1 thru 6-11, para 6-1 thru 6-5.</td></tr> </table>	Action:	Identify convoy planning considerations.	Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment.	Standards:	Identified convoy planning considerations by correctly answering questions pertaining to the subject matter IAW FM 55-30 p 5-5, para 5-4.	Action:	Identify convoy defense measures IAW FM 55-30.	Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment.	Standards:	Identified convoy defense measures by correctly answering questions pertaining to the subject matter IAW FM 55-30, pp 6-1 thru 6-11, para 6-1 thru 6-5.
Action:	Identify convoy planning considerations.												
Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment.												
Standards:	Identified convoy planning considerations by correctly answering questions pertaining to the subject matter IAW FM 55-30 p 5-5, para 5-4.												
Action:	Identify convoy defense measures IAW FM 55-30.												
Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment.												
Standards:	Identified convoy defense measures by correctly answering questions pertaining to the subject matter IAW FM 55-30, pp 6-1 thru 6-11, para 6-1 thru 6-5.												
Safety Requirements	None												
Risk Assessment	Low												
Environmental Considerations	None												
Evaluation	This is not a graded exercise. You will discuss your answers in class. You will use the Solution to Practical Exercise 1 to review your responses.												
Instructional Lead-In	None												
Resource	Instructor Materials:												

Requirements	<hr/> <p>Required reference material IAW advance sheet, writing material, easel.</p> <p>Student Materials:</p> <p>Pencils and writing paper</p> <hr/>
Special Instructions	<hr/> <p>None</p> <hr/>
Procedures	<hr/> <p>1. Working alone without references, you have 5 minutes to list at least 15 unit march SOP topics.</p> <p>2. Working with a group, you will use your answers to develop a group solution. The group must list a minimum of 15 topics that a unit march SOP should cover.</p> <hr/>
Feedback Requirements	<hr/> <p>None</p> <hr/>

Instructions: List 15 topics that a unit march SOP should cover.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 4 **Lesson Notes**

LESSON NOTES	
TOPICS	NOTES
<p style="text-align: center;">Troop-Leading Process</p> <p>1. Receive the mission</p> <ul style="list-style-type: none"> a. Begin METT-T Analysis b. Develop Time Schedule <p>2 Issue a Warning Order</p> <ul style="list-style-type: none"> a. Purpose b. Topics c. Format <p>3. Make a Tentative Plan</p> <p>(Estimate of the Situation)</p> <ul style="list-style-type: none"> a. Analyze the Mission b. Analyze the Situation <ul style="list-style-type: none"> (1) Determine Facts (2) Make Assumptions (3) Identify Decisive Points (4) Terrain Analysis <ul style="list-style-type: none"> (a) Observation (b) Cover/Concealment (c) Obstacles 	

PRACTICAL EXERCISE 2

Title	SQUAD TACTICAL OPERATIONS						
Lesson Number/Title	W325 version 2 / SQUAD TACTICAL OPERATIONS						
Introduction	In order to win on the battlefield you must know your duties and responsibilities as a leader. This knowledge will enable you to ensure that your soldiers complete all tasks accurately and in a timely manner.						
Motivator	This practical exercise will give you an opportunity to apply what you learned throughout the lesson, share experiences, and see how it all comes together.						
Learning Objective	<p>NOTE: The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will:</p> <table border="1"> <tr> <td>Action:</td><td>Identify sleep/rest planning considerations.</td></tr> <tr> <td>Conditions:</td><td>As a small unit leader in a company or battalion-level unit, in a classroom environment, given FM 6-22.5.</td></tr> <tr> <td>Standards:</td><td>Identified sleep/rest planning considerations by correctly answering questions pertaining to the subject matter IAW FM 6-22.5, pp 57 thru 75, para 4001 thru 4004.</td></tr> </table>	Action:	Identify sleep/rest planning considerations.	Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment, given FM 6-22.5.	Standards:	Identified sleep/rest planning considerations by correctly answering questions pertaining to the subject matter IAW FM 6-22.5, pp 57 thru 75, para 4001 thru 4004.
Action:	Identify sleep/rest planning considerations.						
Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment, given FM 6-22.5.						
Standards:	Identified sleep/rest planning considerations by correctly answering questions pertaining to the subject matter IAW FM 6-22.5, pp 57 thru 75, para 4001 thru 4004.						
Safety Requirements	None						
Risk Assessment Level	Low						
Environmental Considerations	None						
Evaluation	This is not a graded exercise. You will discuss your answers in class. You will use Solution to Practical Exercise 2 to review your responses.						
Instructional Lead-In	None						
Resource Requirements	<p>Instructor Materials:</p> <p>Required reference material IAW advance sheet, writing material, easel.</p> <p>Student Materials:</p> <p>Pencils and writing paper. Reading material listed above.</p>						

**Special
Instructions
Procedures**

None

1. Working alone without references, you have 5 minutes to list the sleep-loss effects for each amount of time without sleep.
 2. Working with a group, you will use your answers to develop a group solution. The group must list the sleep-loss effects for each amount of time without sleep.
-

**Feedback
Requirements**

None

Instructions: Complete the following table describing the effects of sleep loss.

TIME WITHOUT SLEEP	EFFECT(S)
24 hours	
48 hours	
72 hours	
More than 72 hours	

SOLUTION FOR**PRACTICAL EXERCISE 2**

TIME WITHOUT SLEEP	EFFECT(S)
24 HOURS	Performance on most tasks will be about 75 percent of normal. Ref: FM 6-22.5, p 59, para 4001
48 HOURS	Performance on most tasks will be about 50 percent of normal. Ref: FM 6-22.5, p 59, para 4001
72 HOURS	Performance on most tasks will be about 25 percent of normal. Ref: FM 6-22.5, p 59, para 4001 After 48 to 72 hours without sleep, personnel become militarily ineffective. Ref: FM 6-22.5, p 62, para 4002
MORE THAN 72 HOURS	It is doubtful that a soldier could continue past 72 hours of wakefulness. Ref: FM 6-22.5, p 62, para 4002

THIS PAGE INTENTIONALLY LEFT BLANK

PRACTICAL EXERCISE 3

Title	SQUAD TACTICAL OPERATIONS						
Lesson Number/Title	W325 version 2 / SQUAD TACTICAL OPERATIONS						
Introduction	In order to win on the battlefield you must know your duties and responsibilities as a leader. This knowledge will enable you to ensure that your soldiers complete all tasks accurately and in a timely manner.						
Motivator	This practical exercise will give you an opportunity to apply what you learned throughout the lesson, share experiences, and see how it all comes together.						
Learning Objective	<p>NOTE: The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will:</p> <table border="1"> <tr> <td>Action:</td><td>Identify limited-visibility attack procedures.</td></tr> <tr> <td>Conditions:</td><td>As a small unit leader in a company or battalion-level unit, in a classroom environment, given FM 7-8.</td></tr> <tr> <td>Standards:</td><td>Identified limited-visibility attack procedures by correctly answering questions pertaining to the subject matter IAW FM 7-8, pp 2-60 thru 2-65, para 2-14.</td></tr> </table>	Action:	Identify limited-visibility attack procedures.	Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment, given FM 7-8.	Standards:	Identified limited-visibility attack procedures by correctly answering questions pertaining to the subject matter IAW FM 7-8, pp 2-60 thru 2-65, para 2-14.
Action:	Identify limited-visibility attack procedures.						
Conditions:	As a small unit leader in a company or battalion-level unit, in a classroom environment, given FM 7-8.						
Standards:	Identified limited-visibility attack procedures by correctly answering questions pertaining to the subject matter IAW FM 7-8, pp 2-60 thru 2-65, para 2-14.						
Safety Requirements	None						
Risk Assessment Level	Low						
Environmental Considerations	None						
Evaluation	This is not a graded exercise. You will discuss your answers in class. You will use Solution to Practical Exercise 3 to review your responses.						
Instructional Lead-In	None						
Resource Requirements	<p>Instructor Materials:</p> <p>Required reference material IAW advance sheet, writing material, easel.</p> <p>Student Materials:</p> <p>Pencils and writing paper. Reading material listed above.</p>						

THIS PAGE INTENTIONALLY LEFT BLANK

**Special
Instructions**

None

Procedures

-
1. Working alone without references, you have 5 minutes to list at least 20 control measures and signals for a limited-visibility attack.
 2. Working with a group, you will use your answers to develop a group solution. The group must list at least 20 control measures and signals for a limited-visibility attack.
-

**Feedback
Requirements**

None

Instructions: List 20 control measures and signals for a limited-visibility attack.

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____
16. _____
17. _____
18. _____
19. _____
20. _____

PRACTICAL EXERCISE 4

Title	SQUAD TACTICAL OPERATIONS						
Lesson Number/Title	W325 version 2 / SQUAD TACTICAL OPERATIONS						
Introduction	In order to win on the battlefield you must know your duties and responsibilities as a leader. This knowledge will enable you to ensure that your soldiers complete all tasks accurately and in a timely manner.						
Motivator	This practical exercise will give you an opportunity to reinforce what you learned and share experiences.						
Learning Objective	<p>NOTE: The instructor should inform the students of the following Enabling Learning Objective covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will:</p> <table border="1"> <tr> <td>Action:</td><td>Identify procedures for conducting a defense.</td></tr> <tr> <td>Conditions:</td><td>As a squad leader in a classroom environment given FM 7-8.</td></tr> <tr> <td>Standards:</td><td>Identified procedures for conducting a defense by correctly answering questions pertaining to the subject matter IAW FM 7-8, p 2-66 thru 2-70, para 2-15a thru 2-15f.</td></tr> </table>	Action:	Identify procedures for conducting a defense.	Conditions:	As a squad leader in a classroom environment given FM 7-8.	Standards:	Identified procedures for conducting a defense by correctly answering questions pertaining to the subject matter IAW FM 7-8, p 2-66 thru 2-70, para 2-15a thru 2-15f.
Action:	Identify procedures for conducting a defense.						
Conditions:	As a squad leader in a classroom environment given FM 7-8.						
Standards:	Identified procedures for conducting a defense by correctly answering questions pertaining to the subject matter IAW FM 7-8, p 2-66 thru 2-70, para 2-15a thru 2-15f.						
Safety Requirements	None						
Risk Assessment Level	Low						
Environmental Considerations	None						
Evaluation	This is not a graded exercise. You will discuss your answers in class. You will use Solution to Practical Exercise 4 to review your responses.						
Instructional Lead-In	None						
Resource Requirements	<p>Instructor Materials:</p> <p>Required reference material IAW advance sheet, writing material, easel.</p> <p>Student Materials:</p> <p>Pencils and writing paper. Student Handout 4.</p>						

THIS PAGE INTENTIONALLY LEFT BLANK

**Special
Instructions**

None

Procedures

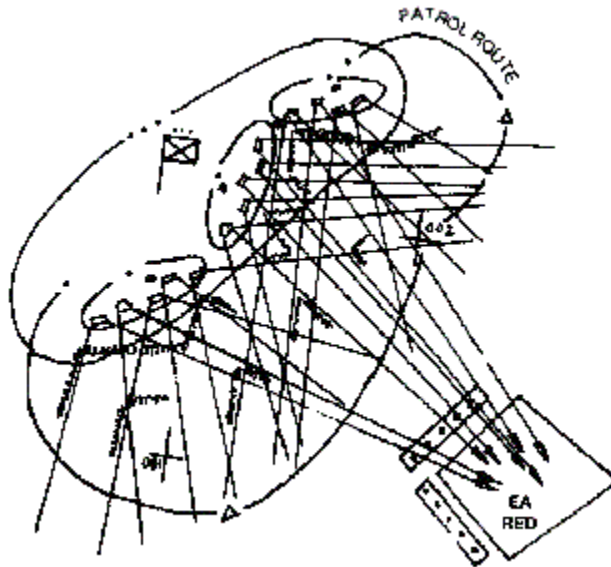
-
1. Working alone, you have 5 minutes to list the defensive actions required in each of the five situations.
 2. Working with a group, you will use your answers to develop a group solution. The group must list the defensive actions required in each of the five situations.
-

**Feedback
Requirements**

None

Instructions: Read each situation and list the required actions.

Situation 1. Your platoon is establishing the defensive position shown below. In the space provided, list the actions necessary to occupy and prepare to defend the position.



1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____
11. _____
12. _____
13. _____
14. _____
15. _____

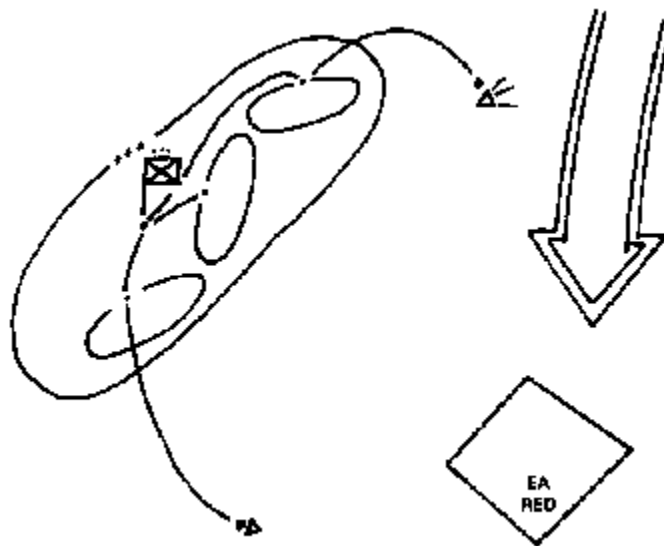
16. _____

17. _____

18. _____

19. _____

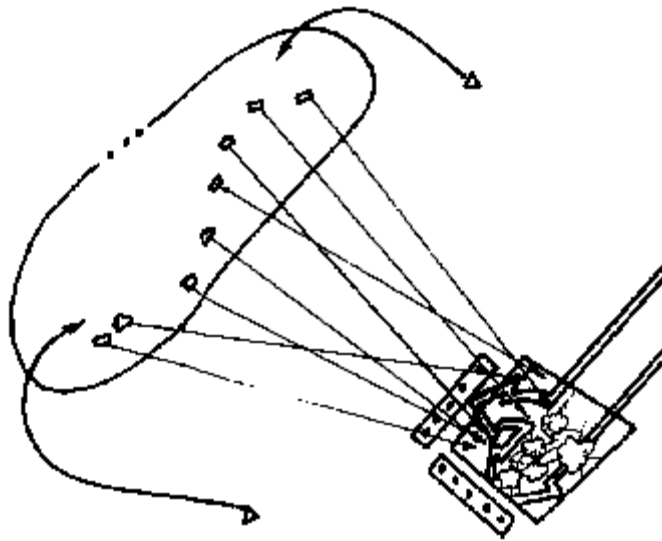
Situation 2. An observation post has detected the enemy force moving toward your platoon's engagement area. In the space provided, list the actions required at this point in the defense.



1. _____

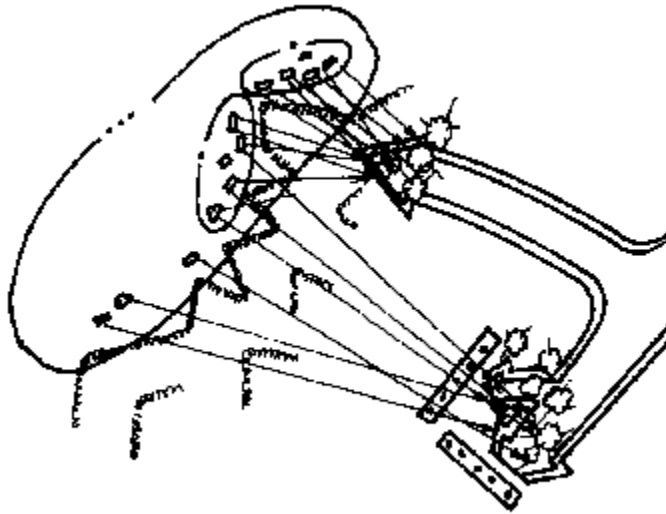
2. _____

Situation 3. The enemy force has entered the engagement area. In the space provided, list the actions required at this point in the defense.



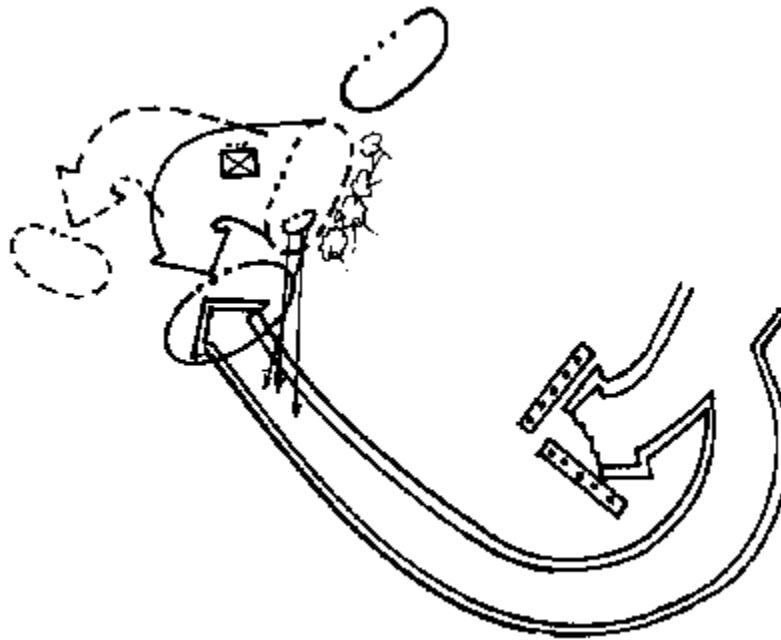
1. _____
2. _____
3. _____
4. _____

Situation 4. Your platoon leader determines the enemy's attempt to bypass the engagement area will not be successful and the platoon can destroy the enemy from its assigned position. In the space provided, list the actions required at this point in the defense.



1. _____
2. _____

Situation 5. Your platoon leader determines that the enemy's attempt to bypass the engagement will be successful and that the platoon cannot destroy the enemy from its assigned position. In the space provided, list the actions required at this point in the defense.



1. _____
2. _____
3. _____
4. _____

HANDOUTS FOR LESSON 1: W321 version 1

This appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1 and SH-1-2
SH-2, Graphics and Overlays Workbook	SH-2-0 to SH-2-26
IH-1, Graphics and Overlays Solutions	IH-1-0 to IH-1-23
IH-2, FM 101-5-1 changes	IH-2-1 to IH-2-3
IH-3, Practice Graphics	IH -3-1 to IH-3-6
SH-3, FM 101-5 Extract	SH-3-1
SH-4, FM 3-25.26 Extract	SH-4-1

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 1

Advance Sheet

Lesson Hours This lesson consists of four hours of small group instruction and a four hour PE.

Overview Communications among commanders, their subordinates, and staff sections are of foremost importance. Often, commanders can best accomplish these communications in the form of an overlay or decision graphic. This lesson acquaints you with the symbology necessary to prepare an overlay using military symbols and graphics. This lesson consists of a classroom discussion before class on day eleven reading assignments, a graphics workbook, and three practical exercises.

Learning Objective Terminal Learning Objective (TLO).

Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.
Condition:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).
Standard:	<p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by:</p> <ul style="list-style-type: none">- Identifying, operational terms, acronyms, and abbreviations.- Identifying graphic control measures.- Identifying unit symbols.- Identifying equipment symbols.- producing a mission map overlay. <p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p>

ELO A Identify operational terms, acronyms, and abbreviations.

ELO B Identify graphic control measures.

ELO C Identify unit symbols.

ELO D Identify equipment symbols.

ELO E Construct an overlay.

Assignment The assignments for this lesson are:

- Read FM 101-5-1, Operational Terms and Graphics, Chapters 3, 4, 5, and Appendices A thru D. Read FM 3-25.26 (SH-4) Chapter 7.
 - Skim FM 101-5-1, Chapters 1 and 2 and Appendix E.
 - Skim FM 101-5 (SH-3), Appendix H.
 - Complete Graphics and Overlay Workbook and turn into instructor on day five.
 - Complete Practical Exercise 1 and turn into instructor on day five.
-

**Additional
Subject Area
Resources**

None

Bring to Class

You must bring the following items to class:

- All reference materials received.
 - Writing materials.
-

Student Handout 2

This student handout contains the Graphics and Overlays Workbook

THIS PAGE INTENTIONALLY LEFT BLANK

GRAPHICS AND OVERLAYS WORKBOOK



PROPONENT FOR THIS WORKBOOK IS THE U.S. ARMY SERGEANTS MAJOR ACADEMY. SEND COMMENTS AND RECOMMENDATIONS ON DA FORM 2028 (RECOMMENDED CHANGES TO PUBLICATIONS AND BLANK FORMS) DIRECTLY TO THE COMMANDANT, ATTN: ATSS-DC, USASMA, 11291 SGT E. CHURCHILL ST., FORT BLISS, TX 79918-8002.

OPERATIONAL TERMS AND GRAPHICS INSTRUCTIONS

The basis for this workbook is based on FM 101-5-1, Operational Terms and Graphics, September 1997. It will provide you with a working knowledge to identify and construct operational symbols and graphics.

You must take your time and study each page as you complete this workbook. Otherwise, you'll learn very little from carelessly answering the questions or drawing the symbols. As you progress, your speed, accuracy, and neatness will improve.

Before you begin the workbook, open FM 101-5-1 to the Contents, page i. There are five Chapters and five Appendixes. If you have a question concerning a term or abbreviation, look in either of the first two chapters. Your instructor is also available to answer questions.

Note the shadowed boxes located at the beginning of chapter one. These provide you with pages to link definitions to graphic examples located throughout the manual. Use as an example page 1-1, Abatis. The shadowed box indicates page 3-27. Turn to page 3-27 to see an example of the graphic Abatis

You must complete this workbook and turn in to instructor on day five of the course. Your instructor will grade and return to you this workbook and provide you with any detailed assistance during study hall prior to the next portion of this class.

Your goal upon completion of this workbook should be a better understanding of FM 101-5-1. You will need this knowledge to successfully complete the Graphics and Overlays examination.

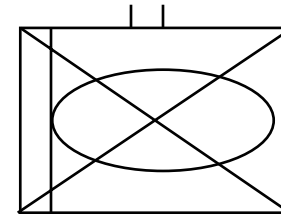
NOTE: This workbook is laid out in the same order we want you to plot an overlay.

While attending BNCOC, use the following colors and suggested pen types to complete your overlays.

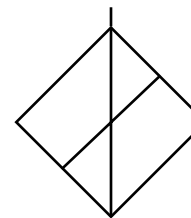
Green: All obstacles, friendly, enemy, neutral, and factional unit symbols. (fine & superfine alcohol pens)



Black: All friendly units and graphic control measures. (medium, fine, & superfine alcohol pens)



Red: Enemy symbols and enemy graphic control measures. (fine & superfine alcohol pens)



What page in FM 101-5-1 refers to the use of these colors?_____

Another step in Graphics is the posting of lateral boundaries between units. A boundary is a control measure normally drawn along identifiable terrain features and used to outline areas of tactical responsibility for subordinate units.

Lateral boundaries are control measures that define the left and right limits of a unit's sector or zone of action. Together with rear and forward boundaries, and a coordinating altitude, lateral boundaries define the area of operations for a commander. Label lateral boundaries to reflect available information to achieve clarity. Authorized abbreviations are provided in Chapters 2 and 4. Chapter 3 defines required fields for lateral boundaries.

————— 25 ID
 XX —————
 122 SIB (M)

Lateral Boundary between 25th Inf Div
and 122d Inf BDE (SEP) (M)

CO TM A

————— | —————

CO TM B

Lateral Boundary between Co Tm A
and Co Tm B, TF 1-5 (AR)

————— D
 |
 B

Lateral Boundary between Co D
and Company B

————— 10 ID (M)
 XX —————
 25 ID (L)

Lateral boundary between 10th Inf Div (M)
and 25th Inf Div (L)

TF 1-5 (AR)

————— || —————

3-15 Inf (M)

Lateral Boundary between TF 1-5 (AR)
and 3-15 Inf BN (M)

TF 1-5 (AR)
————— || —————
 2 BDE (AR)

Rear Boundary between TF 1-5 (AR)
and 2d BDE (AR)

Label each boundary in accordance with the provided information. For this exercise, place the first unit to the north and the second unit to the south. Consider the top of the page as north.

1st BDE (M) Rear Boundary. 1st BDE (M) is part of 3d Inf Div (M) _____

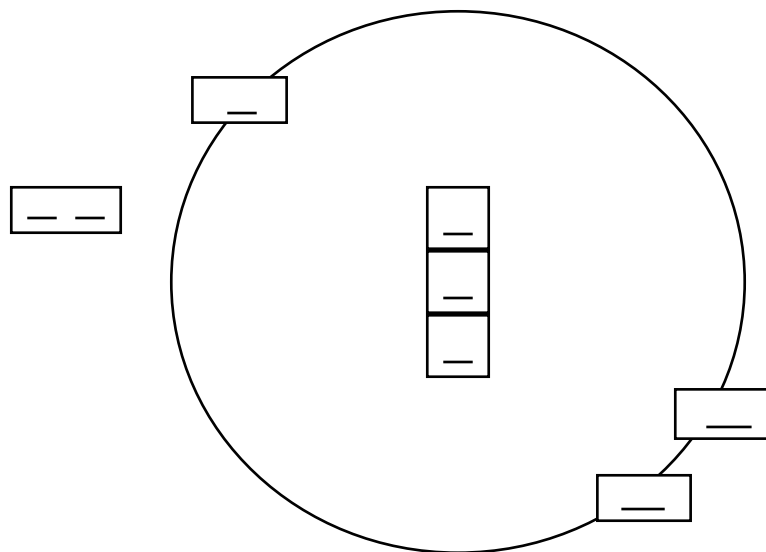
Lateral Boundary between 10th Corps (US) and 1 Armored Div (UK) _____

B Company Rear Boundary. B Company is part of TF 1-79 (M) _____

Lateral Boundary between Co Tm F and Co Tm B _____

TF 1-4 (AR) Rear Boundary. TF 1-4 (AR) is part of 3d BDE _____

List the reference page and identify the fields for an **AREA**.



Identify the required alphanumeric characters for field Whiskey, (DTG).

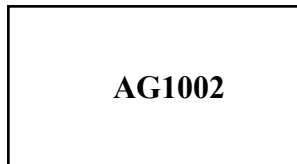
Identify the following “Fire and Maneuver”
and “Fire Support” symbology and list the
page reference for each symbol.



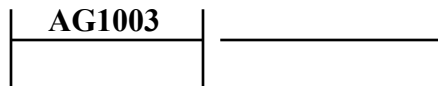
AG1001



BOMB



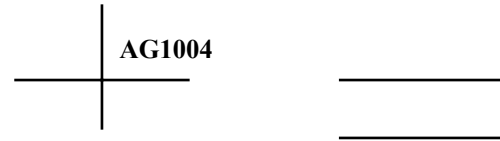
AG1002



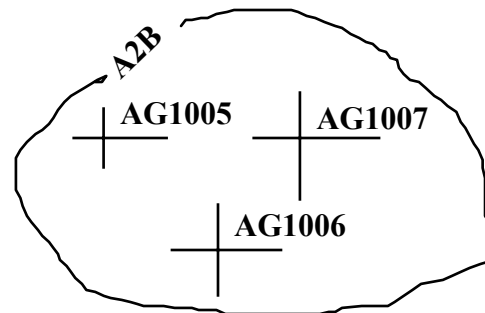
AG1003

EFF 090900Z DEC 99

FSCL X (US) CORPS



AG1004

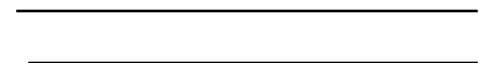
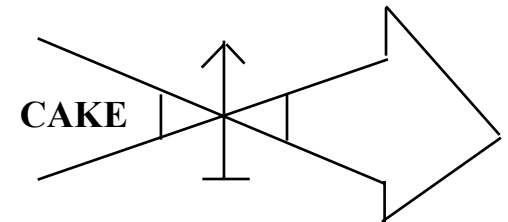
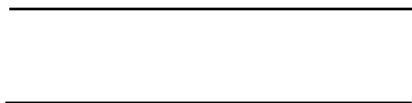
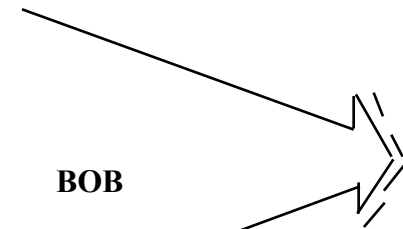
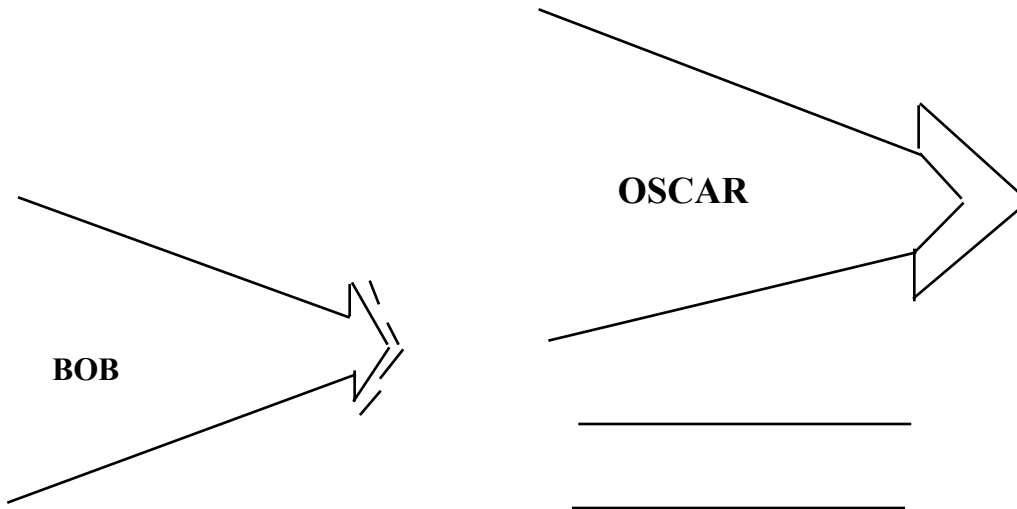
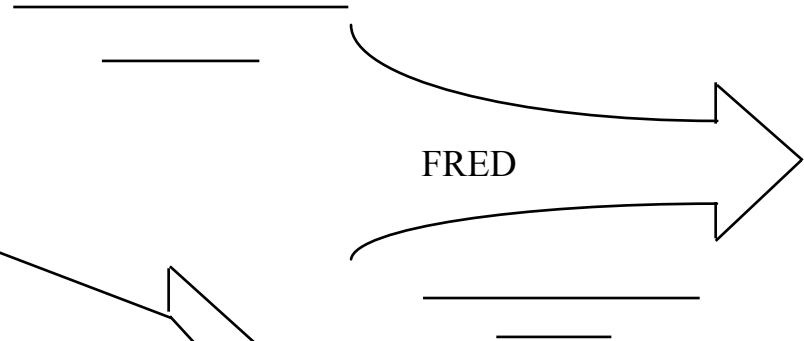
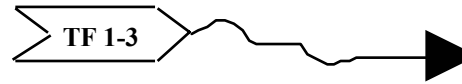
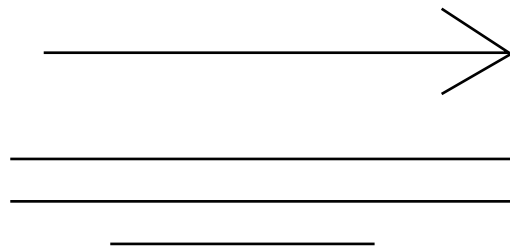


AG1005

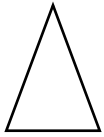
AG1007

AG1006

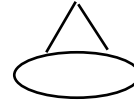
Identify the following symbols and list the page reference for each.

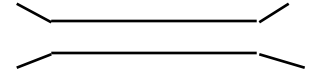


Identify the following Mobility and Survivability symbology and list the page reference for each.



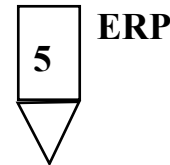


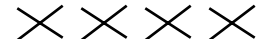










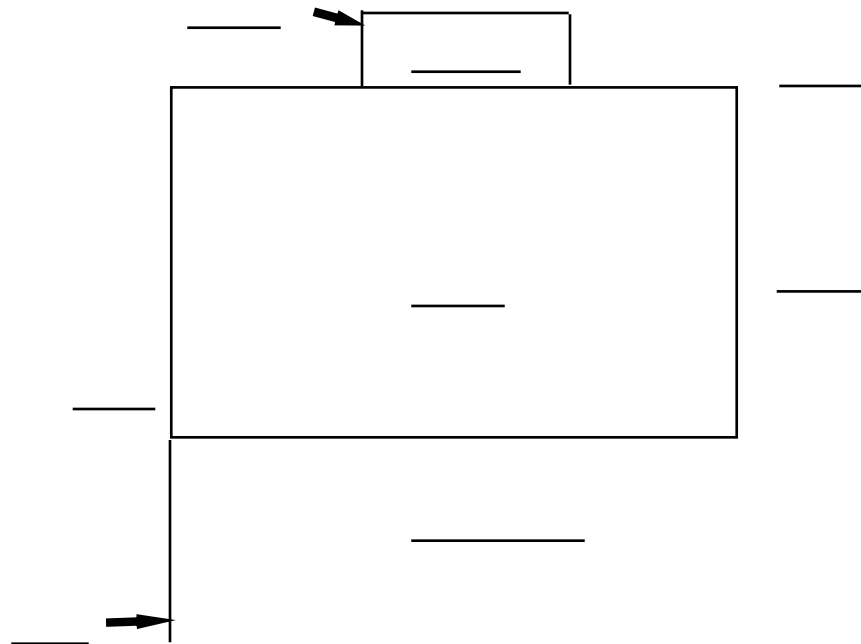


The required **Mandatory** fields for any specific symbol are those fields needed to correctly represent any given symbol.

For most unit symbols, it is necessary to fill in fields **Alpha**, **Bravo**, **Tango**, and possibly **Delta**, **Foxtrot**, **Hotel**, and **Sierra**.

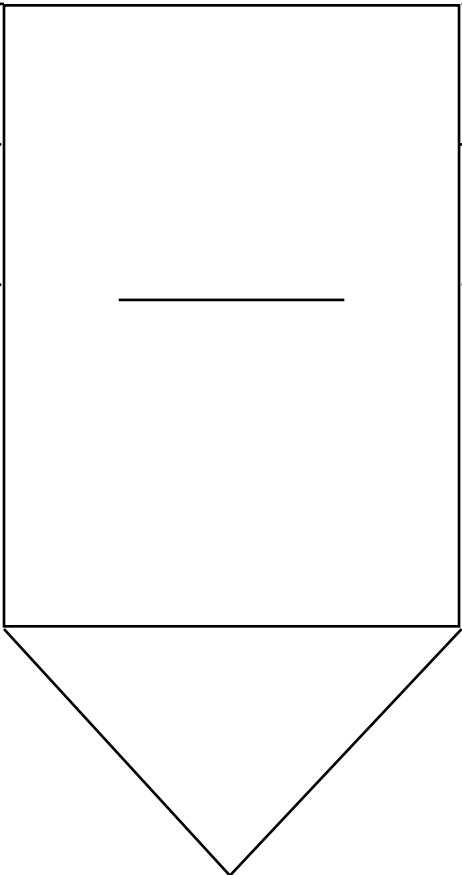
Notice that with field Alpha there are several modifiers required to correctly depict a unit i.e., Airborne, Gun system equipped, or Bicycle equipped.

Identify each of the fields indicated for this symbol:



List the page reference and identify the fields for a point.

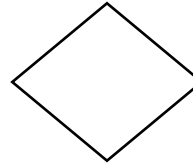
<hr/>		<hr/>
<hr/>	<hr/>	<hr/>



These are the three basic symbols used in graphics.



FRIENDLY GROUND UNITS
(RECTANGLE)



ENEMY UNITS (DIAMOND)

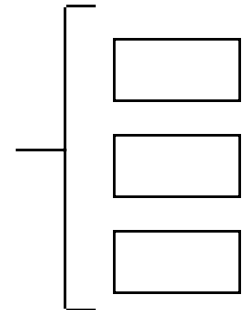
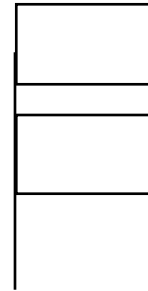
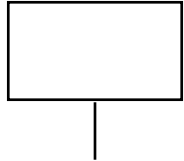


NEUTRAL (SQUARE)

What is the reference page? _____

NOTE: FM 101-5-1 SHOWS SYMBOLOGY FOR SHIPS AND AIRCRAFT, HOWEVER THESE SYMBOLS ARE NOT ADDRESSED IN THIS COURSE. THE NEW FM ALSO DELETED THE CIRCLE REPRESENTING AN INSTALLATION.

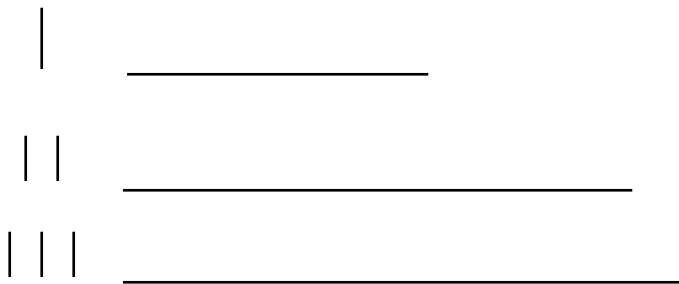
What do the following symbols represent and what is the reference page in FM 101-5-1?



We use dots to show the size of units below Company level. These sizes are--

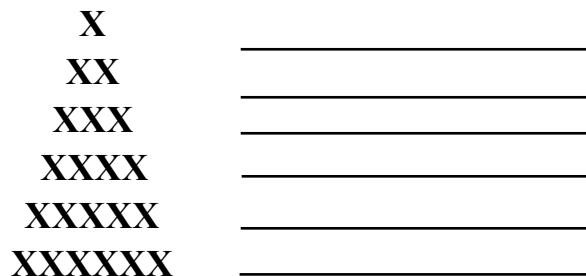


We use vertical lines to represent the size of units from Company to Regimental/Group level. These sizes are--



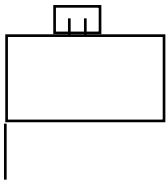
We use X's to represent the size of Brigade thru REGION Units.

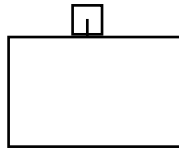
Annotate below which unit size is depicted:

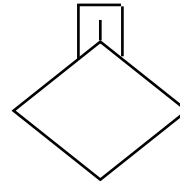


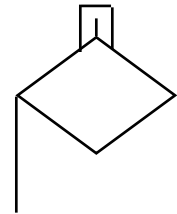
Field _____, placed over the size indicator denotes a temporary grouping of units. We use this special size indicator to depict a _____ or _____. If you are drawing a Headquarters element, what field must you use? _____ You can find this field on the friendly and enemy types of symbols.

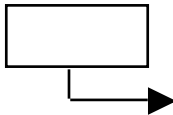
What do these symbols represent?

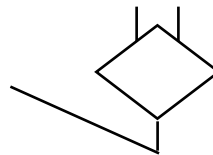






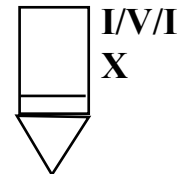
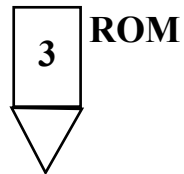
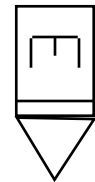
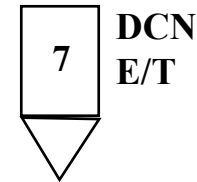
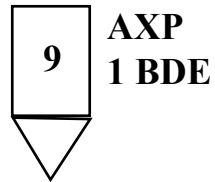
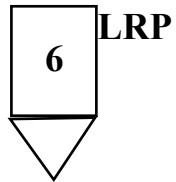
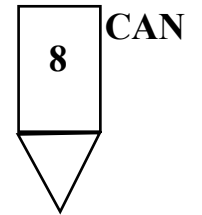
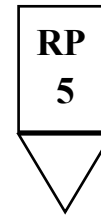
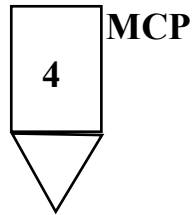
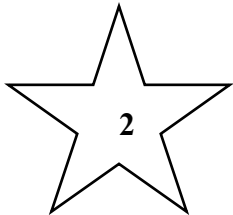




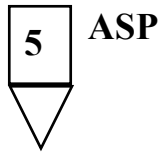


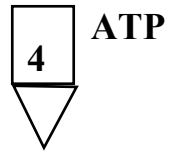


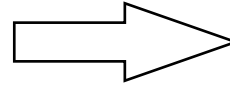
Identify the following symbols and list the page reference for each.

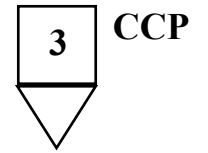


Identify the following CSS symbology and list the page reference for each.





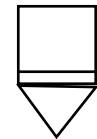


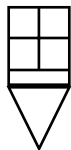


MSR BILL

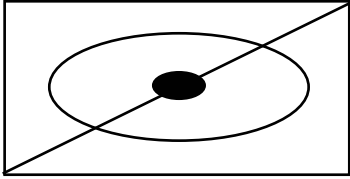


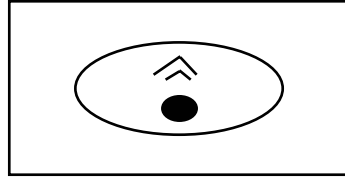


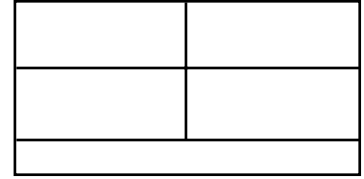


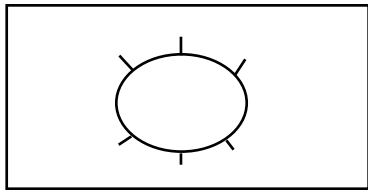


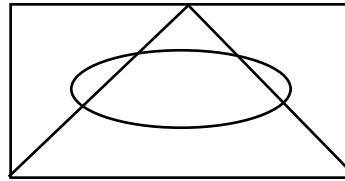
Identify these symbols.

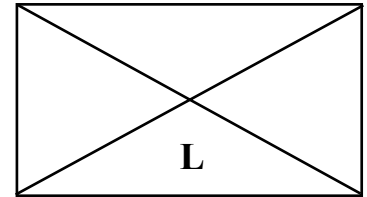


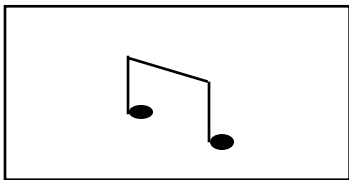


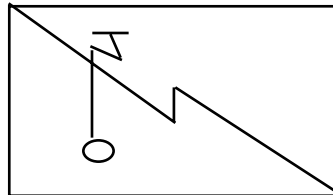


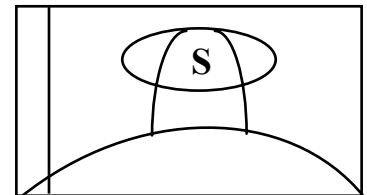




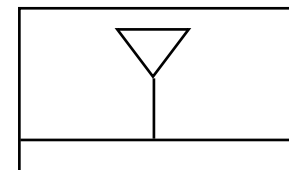
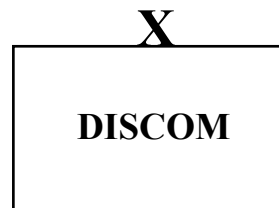
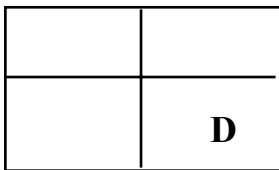
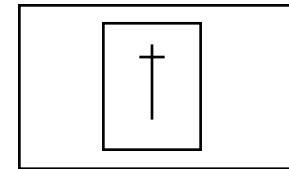
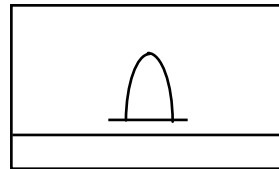
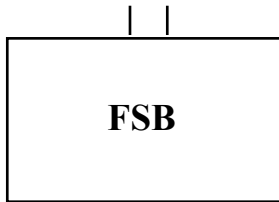
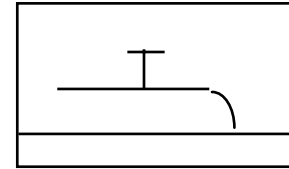
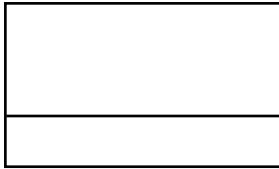




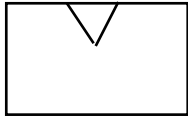


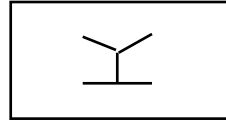


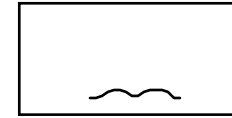
Identify these Combat Service Support Units.

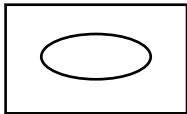


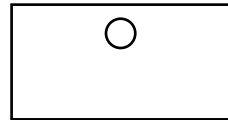
Now that you know how to show the size, and some of the role indicators, it's time to work on some of the over 1000 possible symbols. We will only learn a few at a time. Start on page 4-8 (FM 101-5-1) and identify these modifiers to field Alpha.

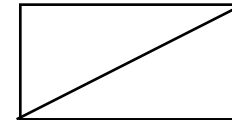


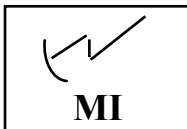


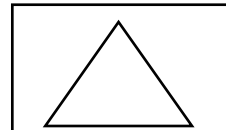


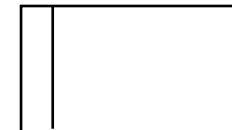




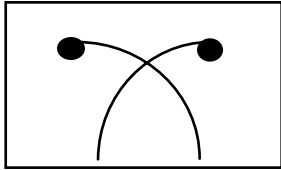




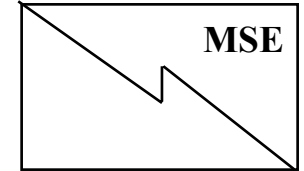


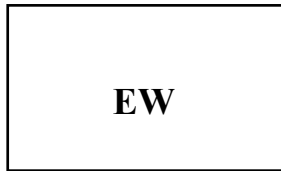


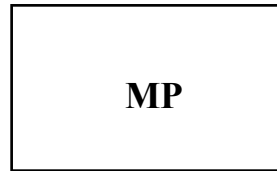
Identify these Combat Support Units.

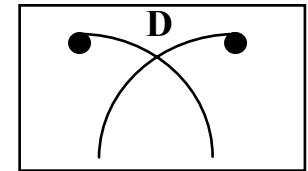


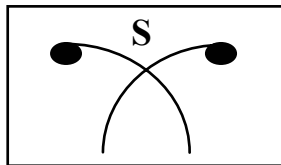


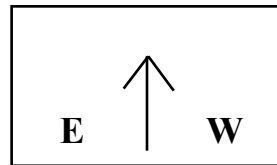


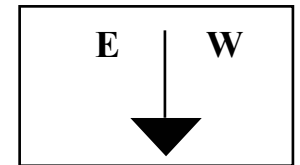




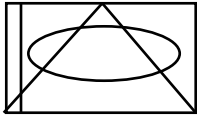


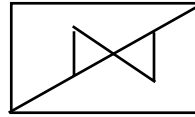


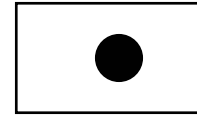


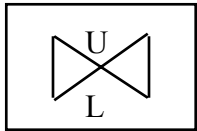


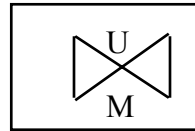
Identify these units.

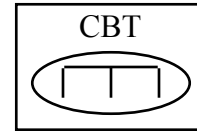


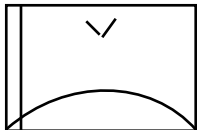


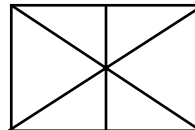


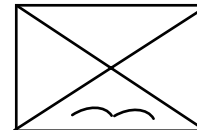




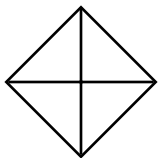


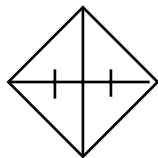


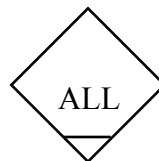


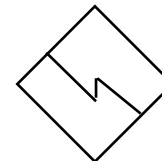


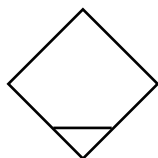
Identify the following symbols from Appendix B and D.

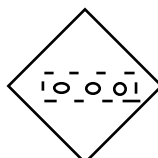


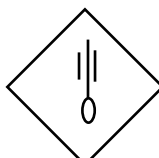


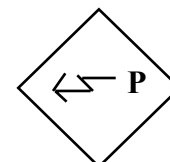


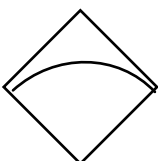


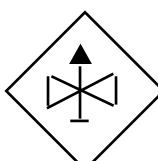


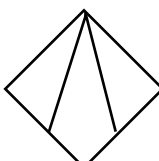


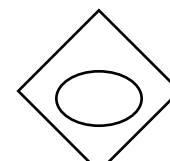




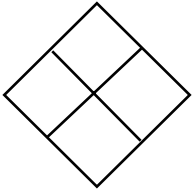


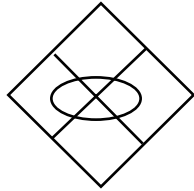


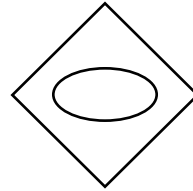


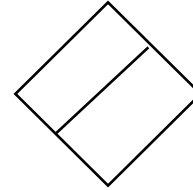


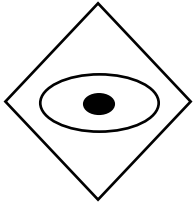
Identify the following symbols from Appendix B and Chapter 4.

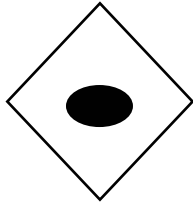


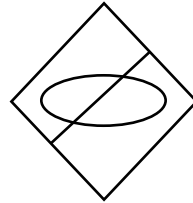


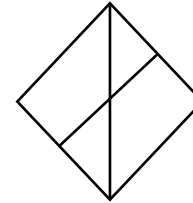


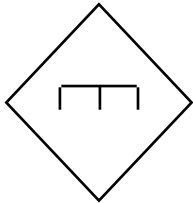


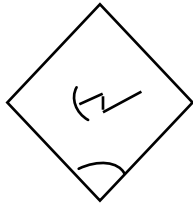


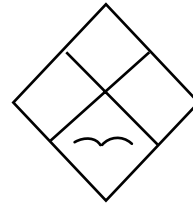


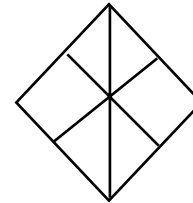












Using your template, draw the correct symbols for the units listed to include fields Alpha, Bravo, Delta, and Tango.

1st Plt, Airborne Inf

Company A, Airborne Inf
(Enemy)

1st Section, Bicycle Equipped Inf

Company Medical Treatment
Facility (Enemy)

1-79 Inf (M)(B)

1-33 Engineers BN
(Enemy)

10th Armored Cavalry Regiment
(Enemy)

3d Squad Inf Observation Post

ADA Team Listening Post

A Battery, Field Artillery (SP)

TF 1-4 Armor

GSR Team

Using your template, draw the correct symbols for the units listed to include fields Alpha, Bravo, Delta, and Tango.

Co Tm B, 1-81 Inf (M)

1st Plt, A Co, 52d Signal BN

A Co, 52d Maintenance BN

1st Plt, A Co, 52d Engineers (M)

HQs, TF 1-81 (AR)

Tm D, 1st Special Forces

A Co HQs, 4th PYSOP BN

D Co, 10th Water Distribution BN

Scout Plt, 1-79 AR
(HMMWV Equipped)

Student Handout 3

Extracted Material from FM 101-5

This student handout contains 10 pages of extracted material from the following publication:

- FM 101-5, Staff Organizations and Operations, 31 Dec 1997
Appendix H pages H-1 thru H-10

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

Appendix H

PLANS AND ORDERS

This appendix explains how to construct plans and orders from battalion to corps levels. General information on the content and construction of plans and orders is followed by examples. For guidance on the preparation of orders and plans at echelons above corps, refer to JP 3-0, JP 5-03.1, and FM 100-7.

Plans and orders are the means by which the commander expresses to his subordinates his battlefield visualization, intent, and decisions, focusing on the results the commander expects to achieve—his vision of the end state of an operation. This gives subordinates the maximum operational and tactical freedom to accomplish the mission while providing only the minimum restrictions and details necessary for synchronization and coordination. Plans and orders should provide the *what* rather than the *how* to encourage initiative. Plans and orders are the method the commander uses to synchronize military actions. They also help the staff synchronize the commander's decisions and concepts. Plans and orders—

- Permit subordinate commanders to prepare supporting plans and orders.
- Implement operations derived from a higher commander's plan or order.
- Focus a subordinate's activities.
- Provide tasks and activities, constraints, and coordinating instructions necessary for the successful completion of missions.
- Do not inhibit agility, speed, and initiative in carrying out missions.
- Are communications conveying instructions in a standard, recognizable, clear, and simple format.

The amount of detail the commander provides in a plan or an order depends on the experience and competence of subordinate commanders, the cohesion and tactical experience of subordinate units, and the complexity of the operation. The commander balances these factors with his guidance and intent and determines the type of plan or order to issue. To maintain clarity and simplicity, plans and orders include annexes only when necessary and only when they pertain to the entire command. The annexes describe the additional support and

synchronization necessary to accomplish the command's assigned tasks.

All operation plans and orders—

- Have five paragraphs.
- Provide task organization and the scheme of maneuver.
- Provide a clear, concise mission statement, based on the mission assigned by the higher headquarters, that includes execution time and date.
- Convey the commander's intent and concept of operations.
- Usually include an overlay.

Included in this Appendix is a verbatim transcript of an order issued by VII Corps in World War II. It represents a typical order seen during the continuing operations of US Army forces in WWII. The brevity and simplicity of this basic order is remarkable considering that the operation involved six divisions under a corps headquarters. This simplicity and brevity was possible because of several factors. VII corps and its subordinate divisions were well trained, with detailed and practiced SOPs. They were combat-tested with experienced and cohesive staffs. Finally, there was trust up and down the chain of command. Today's units can strive for emulation of these conditions that can lead to simple and concise operation plans and orders.

NOTE: Figure H-1, page H-11, is a list of the figures in this Appendix. The figures, beginning on page H-12, contain examples and procedures for completing plans, orders, and annexes.

PLANS

A **plan** is a proposal for executing a command decision or project. It represents the command's preparation for future or anticipated operations. Because plans concern future operations and help the staff make assumptions about the nature of the situation at the time of execution, they cannot remain static. As the commander and staff change or adjust their estimates to reflect the current analysis of the situation, they must also change the plans.

The **operation plan** (OPLAN) is a plan a command uses to conduct military operations. Commanders may initiate preparation of possible operations by first issuing an OPLAN. (See Figure H-2, page H-12, and Figure H-3, page H-14.) The OPLAN—

- States critical assumptions that form the basis of the plan (in paragraph 1d of the OPLAN). Assumptions must be revalidated prior to execution of the plan.
- Becomes an OPORD when the conditions of execution occur and an execution time is determined.

A **service support plan** (SSPLAN) provides information and instructions covering an operation's service support. Estimates of the command's operational requirements are the bases for the service support plan. The SSPLAN becomes the service support order when the conditions of execution occur. (See Figure H-4, page H-20.)

Other plans are—

- The **supporting plan**, which complements another plan.
- The **contingency plan**, which provides for accomplishing different, anticipated major events before, during, and after an operation.
- The **concept plan (CONPLAN)**, which the corps uses when augmented to become a joint task force. It is an abbreviated plan, or outline, for an operation that requires considerable expansion or alteration to convert it into an OPLAN or OPORD. A CONPLAN states important features or principles of a course of action before detailed planning begins. It provides information to higher headquarters and seeks approval and allocation of resources.

ORDERS

An **order** is a written or an oral communication directing actions. Orders are based on plans or the receipt of a new mission. There are two general categories of orders—administrative and combat. **Administrative orders** cover normal administrative operations in garrison or in the field. They include general, specific, and memorandum orders; courts-martial orders; and bulletins, circulars, and other memoranda. (For details, see AR 25-30 and AR 600-8-105.) **Combat orders** pertain to strategic, operational, or tactical operations and their service support. Combat orders include *operation orders*, *service support orders*, *movement orders*, *warning*

orders, and *fragmentary orders*. This appendix is limited to combat orders.

Operation orders (OPORDs) are directives a commander issues to subordinate commanders to coordinate the execution of an operation. They always specify an execution time and date. (See Figures H-2 and H-3.)

The **service support order** (SSORD) provides the plan for service support of operations, including administrative movements (Figure H-4). It provides information to supported elements and serves as a basis for the orders of supporting commanders to their units. SSORDs may be issued either with an OPORD, or separately when the commander expects the CSS situation to apply to more than one operation plan or order. At division and corps levels of command, the SSORD may replace an OPORD's service support annex. If that happens, the staff refers to the existence of the SSORD in paragraph 4 of the OPORD. Staffs at brigade and lower levels of command may cover all necessary information in paragraph 4 of the OPORD without annexes or a separate SSORD. The SSORD follows the same format as the OPORD. It is usually in writing and may include overlays, traces, and other annexes.

The G4 (S4) has primary coordinating responsibility for preparing, publishing, and distributing the SSORD. Other staff officers, both coordinating and special, provide those parts of the order concerning their responsibilities. Their input may be a single sentence or a complete annex.

The **movement order** is a stand-alone order that facilitates an uncommitted unit's movement (Figure H-5, page H-25). The movements are typically administrative, and troops and vehicles are arranged to expedite their movement and to conserve time and energy when no enemy interference (except by air) is anticipated. Normally, these movements occur in the communications zone. The G4 (S4) has primary coordinating staff responsibility for planning and coordinating movements. However, he receives assistance from other coordinating and special staff officers (such as the G3 (S3), PM, MP, transportation officers, and movement-control personnel). The G4 (S4) is also responsible for preparing, publishing, and distributing the movement order.

However, when conducting ground movement in rear areas of the combat zone where enemy interference is expected, the movement order may become a highway regulation annex (in NATO, this is referred to as the *movement annex*) to an OPORD or SSORD. The G3 (S3) plans and coordinates these tactical movements.

The **warning order** (WARNO) is a preliminary notice of an order or action that is to follow (Figure H-6). Warning orders help subordinate units and their staffs prepare for new missions. Warning orders maximize subordinates' planning time, provide essential details of the impending operation, and detail major time-line events that accompany mission execution. The amount of detail a warning order includes depends on the information and time available when the order is issued and the information subordinate commanders need for proper planning and preparation. The words WARNING ORDER precede the message text. With the commander's (or Cof S's (XO's)) approval, a coordinating or special staff officer may issue a warning order.

The warning order clearly informs the recipient of what tasks he must do now as well as informs him of possible future tasks. However, a WARNO does not authorize execution other than planning unless specifically stated. The WARNO follows the five-paragraph field order format and may include the following information:

- Required maps (if changed from the current OPORD).
- The enemy situation and significant intelligence events.
- The higher headquarters' mission.
- Mission or tasks of the issuing headquarters.
- The commander's intent statement (when available).
- Orders for preliminary action, including reconnaissance and surveillance.
- Coordinating instructions (estimated time lines, orders group meeting, time to issue order).
- Service support instructions, any special equipment necessary, regrouping of transport, or preliminary movement of units.

Every warning order involving movement should state a time before which there is no movement. This means that a further order must be issued before that time giving actual movement time tables, or extending the period before which there will be no movement.

The **fragmentary order** (FRAGO) provides timely changes of existing orders to subordinate and supporting commanders while providing notification to higher and adjacent commands. Commanders may authorize members of their staff to change existing orders by issuing

FRAGOs in their name. A FRAGO is either oral or written and addresses only those parts of the original OPORD that have changed. The sequence of the OPORD is used and *all five-paragraph headings must be used*. After each heading, state either "No Change" or the new information. This ensures that recipients know they have received the entire FRAGO (especially if the FRAGO is sent over the radio). (See Figure H-7, page H-29.)

The FRAGO differs from an OPORD only in the degree of detail provided. It refers to previous orders and provides brief and specific instructions. The higher headquarters issues a new OPORD when there is a complete change of the tactical situation or when many changes make the current order ineffective.

CHARACTERISTICS OF OPLANS AND OPORDS

Characteristics of good OPLANS or OPORDs include—

- Addressing of critical facts and assumptions. The commander and staff evaluate all facts and assumptions. They retain for future reassessment only those facts and assumptions that directly affect an operation's success or failure. OPORDs do not state assumptions.
- Authoritative expression. The plan or order reflects the commander's intention and will. Therefore, its language must be direct. It must unmistakably state what the commander wants subordinate commands to do.
- Positive expression. State plans and orders affirmatively. "The trains will remain in the assembly area" instead of "The trains will not accompany the unit."
- Avoiding of unqualified directives. Do not use meaningless expressions like *as soon as possible*. Indecisive, vague, and ambiguous language leads to uncertainty and lack of confidence. For example, do not use "try to retain"; instead say "retain until." Avoid using phrases like "violently attacks" or "delays while maintaining enemy contact." Use "attacks" or "delays." Army doctrine already requires attacking violently and maintaining enemy contact during delays.
- Balance. Provide a balance between centralization and decentralization. The commander determines the appropriate balance for a given operation by using METT-T. During the chaos of battle, it is essential

decentralize decision authority to the lowest practical level. Over-centralization slows action and contributes to loss of initiative. However, decentralization can cause loss of precision. The commander must constantly balance competing risks while recognizing that loss of precision is usually preferable to inaction.

- **Simplicity.** Reduce all essential elements to their simplest form, eliminating elements not essential to mission success. Simplicity reduces possibilities for misunderstanding.

- **Brevity.** Be concise, clear and to the point, and include only necessary details using short words, sentences, and paragraphs. *Orders and plans, and their annexes, appendixes, tabs, and enclosures, do not include matters covered in SOPs.* However, where appropriate, they should refer to the SOP.

- **Clarity.** Eliminate every opportunity for misunderstanding the commander's exact, intended meaning. Everyone using the plan or order must readily understand it. Do not use jargon, although acronyms may be used when they do not reduce clarity. Keep the plan or order simple, using doctrinal terms and graphics.

- **Completeness.** Portray the commander's will and provide the necessary information required for execution. Provide control measures that are complete and understandable, and that maximize the subordinate commander's initiative. Provide adequate control means (headquarters and communications), clearly establish command and support relationships, and fix responsibilities to carry out the plan according to the commander's intent.

- **Coordination.** Provide for direct contact among subordinates; fit together all combat power elements for synchronized, decisive action; impose only necessary and doctrinally correct control measures; and help identify and provide for mutual support requirements while minimizing the force's exposure to fratricide.

- **Flexibility.** Leave room for adjustments that unexpected operating conditions might cause. The best plan provides for the most flexibility.

- **Clear, concise mission and intent statements and essential tasks to subordinates.**

- **Centralized planning.** The commander's mission, intent, and concept of operations underlie all plans and orders. Subordinate and supporting commanders develop plans and orders that support their commander's

plan or order. The commander's control over subordinate commanders enhances synchronization and minimizes exposure to fratricide.

- **Decentralized execution.** The commander delegates authority to subordinate and supporting commanders to execute the plan by telling them what he wants done, not how to do it. He expects subordinates to seize and retain the initiative by aggressively and creatively executing his plan. In turn, subordinate and supporting commanders ensure their plans and orders provide for decentralized execution at the next lower echelon, allowing their subordinates to seize opportunities while the higher commander reviews courses of action to exploit success.

- **Use of existing resources for decisive action.** Use all resources organic to the organization and available from higher headquarters. Provide subordinates with sufficient resources to accomplish their missions. Provide for adequate resources (personnel, material, C², liaison, and so on) for the expected duration of the contemplated operation.

- **Timeliness.** Send plans and orders to subordinates in time to allow them to adequately plan and prepare their own actions. When time is short, accept less than optimum products in the interest of timeliness. General George S. Patton, Jr., said, "A good plan violently executed now is better than a perfect plan next week."

TECHNIQUES FOR ISSUING ORDERS

There are several techniques for issuing orders. They can be oral, written, or electronically produced, using matrixes or overlays. Five-paragraph *written orders* are the standard format for issuing combat orders. Orders may be generated and disseminated via *electronic* means to reduce the amount of time necessary to gather and brief the orders group. When available preparation time or resources are constrained, the commander may use the *matrix* method of issuing an order.

The *overlay order* combines the five-paragraph order with the operation overlay. The commander may issue the overlay order when planning preparation time is severely constrained and he must get the order to subordinate commanders by the most expeditious means. He may issue the overlay order by any suitable graphic method. The overlay order may consist of more than one overlay. A separate overlay or written annex can

contain the service support coordination and organizations. (See Figure H-8, page H-30.)

Oral orders are used when operating in an extremely time-constrained environment. They offer the advantage of orders being passed quickly to subordinates but at the risk of critical information being overlooked or misunderstood in the haste of circumstances. Oral orders are most often used for FRAGOs.

Plans and orders generally include both text and graphics. Graphics convey information and instructions through military symbols. (See FM 101-5-1.) They complement the written portion of a plan or an order and promote clarity, accuracy, and brevity. The Army prefers depicting information and instructions graphically when possible. However, the mission statement and the commander's intent must be in writing.

An overlay graphically portrays the location, size, and activity (past, current, or planned) of depicted units more consistently and accurately than can text alone. An overlay enhances a viewer's ability to analyze the relationships of units and terrain. A trained viewer can attain a vision of a situation, as well as insight into the identification of implied tasks, relationships, and coordination requirements, that the written plan or order may not list or readily explain. Overlay graphics may be used on stand-alone overlays or overprinted maps in annexes, appendixes, tabs, and enclosures. The issuing headquarters is responsible for the location accuracy of coordinating points, boundaries, and other control measures, transposing graphics to and from the map scale used by subordinate headquarters. (See Figure H-8.)

ADMINISTRATIVE INSTRUCTIONS FOR PREPARING PLANS AND ORDERS

The following information pertains to all plans and orders. Unless otherwise stated, the term order is used to mean both plans and orders during the discussion. Figures H-2 and H-3 show *annotated formats for orders* having prescribed formats. Figure H-9, page H-34, is a sequential list of annexes and appendixes. Figure H-10, page H-36, shows a *common annotated annex format*. The remaining figures show *annotated formats for annexes, appendixes, and tabs* having prescribed formats.

General Information

Show all paragraph headings on written orders. There is no need to place an entry under each heading, except for, Mission, paragraph 2, and Commander's Intent, paragraph 3. A paragraph heading with no text will state: "None," "See Annex __," or "See Overlay." Conventions such as the bold font and changes in the font size appearing in the headings of annotated formats are solely for emphasis within this manual. They are not intended to be followed in actual plans or orders.

Abbreviations

Use abbreviations to save time and space if they will not cause confusion. Do not sacrifice clarity for brevity. Keep abbreviations consistent throughout any order and its annexes. Avoid using abbreviations in any joint or combined communications, except those contained in international agreements.

NOTE: FM 101-5-1 and AR 310-50 contain guidance for using operational abbreviations.

Place and Direction Designations

Describe locations or points on the ground by—

- Referring to military grid reference system coordinates.
- Referring to longitude and latitude (if the maps available do not have the military grid reference system (MGRS)).
- Giving the distance and direction from a simple reference point (for example, crossroads 1,000 meters southwest of church tower of NAPEIRVILLE LB6448).

Designate directions in one of three ways:

- By using two locations or places (for example, direction ECKENTAL PV6690—PEGNITZ PA6851).
- As a point of the compass (for example, north or northeast).
- As a magnetic, grid, or true bearing, stating the unit of measure (for example, a magnetic bearing of 85 degrees).

When a place or feature on a map is mentioned for the first time in an order, print the name in capital letters exactly as spelled on the map and show its grid coordinates in parenthesis after it. When a control measure such as a contact point or supply point is used for the first time in an order, print the name or designation of the point

followed by its grid coordinates in parenthesis. Use four-, six-, or eight-digit MGRS coordinates (as necessary to precisely locate the place, feature, or point) preceded by the 100-kilometer square designation (for example, LB6448). Thereafter, use names, planning names, or codes and repeat the coordinates only for clarity.

Describe areas by naming the northernmost (12 o'clock) point first and the remaining points in clockwise order. Describe positions from left to right and from front to rear, facing the enemy. To avoid confusion, use compass points to describe flanks, rather than right or left of the friendly force.

Always add compass points for clarity when describing a route if the possibility of confusion exists (for example, "The route is northwest along the road LAPRAIRIE-DELSON"). If a particular route already has a planning name (such as MSR LAME DOG), refer to the route using only that designator.

Designate trails, roads, and railroads by the names of the places near their locations. If you do not use place names, use grid coordinates. Precede place names with trail, road, or railroad (for example, road GRANT—CODY). To be consistent with planned movement, designate the route by naming a sequence of grid coordinates along the direction of movement. When there is no movement, name the sequence of points from left to right or front to rear, facing the enemy.

Describe river banks using the cardinal points of the compass or as either near or far in crossing operations.

Describe boundaries and phase lines by easily distinguishable terrain features (from the ground or air or on a map). When designating boundaries between units, state specifically which unit has responsibility and authority for the place, feature, or location to which the description refers. State each location along a boundary as either inclusive or exclusive to a unit (for example, 1st Bde, exclusive crossroad LB621352). List boundaries and phase lines in the order from left to right or front to rear, facing the enemy.

Naming Conventions

Planners must decide on a method to name control measures, routes, assembly areas, and so on. Unit SOPs normally designate naming conventions. For the sake of *clarity* avoid using multiword names, such as Junction City. Simple names are better than complex ones. To

ensure *operations security*, avoid assigning names that could reveal unit identities, such as the commander's name or the unit's home station. Do not name sequential phase lines and objectives in alphabetical order. For *memory aids*, use sets of names designated by the type of control measure or subordinate unit. For example, the division might use colors for objective names and minerals for phase line names.

Classification Markings and Procedures

Army Regulation 380-5 contains a detailed description of marking, transmitting procedures, and other classification instructions. Place classification markings at the top and bottom of each page. All paragraphs must have the appropriate classification marking immediately following the numbered designation of the paragraph (preceding the first word if the paragraph is not numbered). Mark unclassified instructional or training material representing orders "_____ for Training, Otherwise Unclassified," with the exercise classification level in the blank. If the entire plan or order is unclassified, no classification markings are required.

When the issuing headquarters sends classified plans or annexes separately, it assigns copy numbers to each and keeps a record of the specific copy or copies sent to each addressee (to facilitate security control).

Annotating Unnamed Dates and Times

In OPLANs or OPORDs, use one of six letters to designate unnamed dates:

- C-day. The day when a deployment operation begins. The deployment may be of troops, cargo, and/or weapons systems, using any type of transport.
- D-day. The day when an operation begins.
- E-day. The day when a NATO exercise begins.
- K-day. The day when a convoy system on a particular convoy lane begins.
- M-day. The day when full mobilization begins.
- S-day. The day (if it is not M-day) when the first mobilization manpower action occurs.

The specific hour on D-day at which a particular operation will begin is H-hour. The highest headquarters planning an operation specifies the exact meaning of D-day and H-hour. If a single plan mentions more than one such event, key the secondary event to the primary event by adding or subtracting days. Refer to days

preceding or following D-day by using a plus or minus sign and an Arabic number following the letter (for example, D-3 is three days before D-day; D+7 is seven days after D-day). When using a time element other than days, spell it out (for example, D+3 months). Refer to hours preceding or following H-hour by a plus or minus sign and an Arabic number following the letter (for example, H-3 is three hours before H-hour; H+7 is seven hours after H-hour). When using a time element other than hours, spell it out (for example, H+30 minutes).

Retain the letter designation used in the original order in translations of OPORDs. Use J only when translating documents to and from French. Use only A, B, N, S, W, and X if other letters are needed; all other letters have multinational meanings.

Where it is necessary to identify a particular operation or exercise, place a nickname, or code words if applicable, before the letter; for example, BALD EAGLE (E-day) or ANVIL EXPRESS (M-day).

Annotating Time

The effective time for implementing the plan or order is the same as the date-time group (DTG). If the effective time of any portion of the order differs from that of the order, explicitly identify this variance at the beginning of the coordination instructions ("Effective only for planning on receipt" or "Task organization effective DTG.")

Include the time zone suffix in the heading data and in the mission statement. The time zone remains the same throughout the order. If local time is chosen, select the appropriate time zone suffix which adjusts for the difference from ZULU time. Many temperate regions practice daylight savings time. For example, Central Standard Time in CONUS uses SIERRA suffix for local time. When daylight savings time is in effect, the local time is ROMEO suffix. The relationship of local time to ZULU, not the geographical location, determines the appropriate time zone suffix.

Express dates in the sequence day, month, and year (6 August 19XX). When using inclusive dates, express them by stating both dates separated by a dash (6-9 August 19XX or 6 August-6 September 19XX). Express times in the 24-hour clock system by means of four-digit Arabic numbers. Include the time zone suffix.

Express the date and time as a six-digit date-time group. The first two digits indicate the day of the month; the last four digits indicate the time. Add the month or

the month and year to the DTG when necessary to avoid confusion. For example, a complete DTG would appear as 060140Z August 19XX.

Identification of Succeeding Pages of the Plan or Order

On pages following the first page, use a short title identification heading. Include the number (or letter) designation and headquarters (for example, OPLAN 7—23d Armd Div or ANX B (INTEL) to OPLAN 15—23d Armd Div).

Page Numbering

Number pages consecutively beginning on the first page. Number second and succeeding pages with Arabic numbers. Use letters and Roman numerals alternately to further identify annexes, appendixes, tabs, enclosures, and additions, in order. Use dashes to separate the alphabetical and Roman numeral groups that precede the Arabic page numbers of annexes, appendixes, and so forth. For example, the designation of the third page of enclosure 7 to tab B to appendix 2 to annex A is A-II-B-VII-3.

Annexes, Appendixes, Tabs, Enclosures

Annexes provide details not readily incorporated into the basic order and help keep the order's basic text short. They should increase the clarity and usefulness of the basic order by providing combat support, combat service support, and administrative details and instructions that amplify the basic order. They are a component to an order but not required if deemed unnecessary; each annex relates to a specific aspect of the operation. The number and type of annexes depend on the commander, level of command, and needs of the particular operation. Make every effort to minimize their number. They are referenced in the body of the order and listed under the heading "annexes" at the end of the order. The sequence for the most common annexes are shown in Figure H-9, page H-34. This sequence is required for all OPORDs and OPLANs. Units that do not require a particular annex indicate this by stating "Annex __ omitted." Additional annexes needed for local command requirements will use the next letter, W, continuing through X, Y, Z, AA, AB, AC, and so forth, as needed.

When an annex that is integral to the basic order has the same distribution as the order, identify it by its title and headquarters (for example, Annex B (Intelligence) to Operation Order 10—52d Mech Div). If an annex has wider distribution than the basic order, or when issuing

an annex separately, give it a heading and title and include all final entries (acknowledgment instructions, the commander's signature, and so on).

Appendixes contain information necessary to expand an annex, **tabs** expand appendixes, and **enclosures** expand tabs. An annex, an appendix, a tab, or an enclosure may be a written text, a matrix, a trace, an overlay, an overprinted map, a sketch, a plan, a graph, or a table. Where appropriate, use the five-paragraph field order format for these documents. The staff officer with responsibility for the activity or service covered in the annex, appendix, tab, or enclosure prepares the document.

Annexes, appendixes, tabs, and enclosures are designated sequentially within their parent document, either alphabetically or numerically. They include a title in parenthesis and always reference the parent document to which they belong. *Annexes* are designated by capital letters (Annex H (Signal) to Operation Order 6—52 Mech Div), *appendixes* with Arabic numbers (Appendix 5 (Messenger Service) to Annex H (Signal) to Operation Order 6—52d Mech Div), *tabs* with capital letters (Tab A (Ground Messenger Service) to Appendix 5 (Messenger Service) to Annex H (Signal) to Operation Order 6—52d Mech Div), and *enclosures* with Arabic numbers (Enclosure 1 (Route Map) to Tab A (Ground Messenger Service) to Appendix 5 (Messenger Service) to Annex H (Signal) to Operation Order 6—52d Mech Div).

Identify additions necessary for expanding enclosures by repeating the procedures for tabs and enclosures. Use double letters (AA) or hyphenated double numbers (1-1) (for example, Enclosure 1-1 (***) to Tab AA (***) to Enclosure 1 (Route Map) to Tab A (Ground Messenger Service) to Appendix 5 (Messenger Service) to Annex H (Signal) to Operation Order 6—52d Mech Div).

Refer to annexes, appendixes, tabs, and enclosures in the body of the parent document by letter or number and title. Also list them at the bottom of the parent document under the appropriate heading.

STANDING OPERATING PROCEDURES

Standing operating procedures (SOP) detail how forces will execute unit-specific techniques and procedures that commanders standardize to enhance effectiveness and flexibility. Commanders use SOP to standardize routine or recurring actions not needing their personal involvement. They develop SOP from doctrinal sources, applicable portions of the higher

headquarters' published procedures, the commander's guidance, and techniques and procedures developed through experience. The SOP must be as complete as possible so that new arrivals or newly attached units can quickly become familiar with the unit's normal routine. In general, SOP apply until commanders change them to meet altered conditions or practices. The benefits of SOP include—

- Simplified, brief combat orders.
- Enhanced understanding and teamwork among commanders, staffs, and troops.
- Established synchronized staff drills.
- Established abbreviated or accelerated decision-making techniques.

The operations officer is responsible for preparing, coordinating, authenticating, publishing, and distributing the command's tactical and administrative SOP, with input from other staff sections.

MATRIXES AND TEMPLATES

A number of staff tools exist to support the commander and his staff in the decision-making process and the development of the order. Tools include the decision support template (DST), synchronization matrix, and execution matrix. However, matrixes and templates are only tools; they are not orders.

The **decision support template** is created by the commander and staff during the decision-making process. A DST graphically represents the projected situation, identifying where a decision must be made to initiate a specific activity or event. It does not dictate decisions; it indicates when and where the need for a decision is most likely to occur.

The staff uses the operations map as the base. Before the war gaming, the staff graphically portrays enemy COAs on the situation templates. After the war game, the staff combines projected enemy and friendly situations (developed during war gaming) with options (such as branch plans) that the commander might employ onto a DST. The DST is also keyed to the synchronization matrix (developed during war gaming). It graphically integrates—

- Time-phased lines (TPLs) and enemy events, activities, and targets.

- Friendly events, activities, scheme of maneuver, and control measures from the synchronization matrix and operation overlay.

- Commander's critical information requirements (CCIR).

- Time estimates (calculations of the times required to implement decisions).

NOTE: FM 34-1 and FM 34-130 contain discussions on the elements of the DST.

The DST supports decisions that are closely linked to other events. These decisions can involve specific targets or other actions that support the commander's concept of operations. Based on the action, reaction, counteraction drill used during war gaming, a DST lists options that should help the unit accomplish the mission. For example, a DST can provide the options for friendly maneuver and fires to counteract enemy reactions to the friendly unit's actions. Additionally, it can support CS- and CSS-related decisions. Examples include the following:

- When the enemy arrives at a certain point, the commander may decide to shift unit positions and displace the division support area.
- When a friendly unit reaches a certain point on the battlefield, the commander may decide to move supporting artillery.

A DST equates time to specific points, areas, or lines in the area of operations. Time is expressed in minutes, hours, or days in relationship to the start of the mission or as a sequence of critical events or activities. The time to accomplish certain actions for both friendly and enemy units is estimated based on set planning factors.

A DST uses NAIs and TPLs to depict specific information requirements. Decision points (DPs) integrate NAIs and CCIR by placing a DP on the projected enemy location where the commander expects to review planned options and make a decision. The TAIs depict engagement points or areas where interdiction of an enemy force will reduce or eliminate particular enemy capabilities or cause him to abandon, modify, or adopt another course of action.

The NAI is a point or area where enemy activity (or inactivity) confirms or denies a particular enemy course of action. It can be a specific point on the ground, a portion of a route, or a larger area. When possible, NAIs are placed in numbered sequences along an avenue of approach or a mobility corridor. This technique helps

calculate movement times between NAIs and limits confusion about the avenue or corridor involved.

Time-phased lines help track enemy movements. They provide a graphic means of comparing the enemy's rate of movement along different avenues of approach and mobility corridors. Time-phased lines can be computed for all types of enemy movement and operations—air assault, deliberate attack, dismounted infiltration, and so forth. Both friendly and enemy movement rates should be adjusted to compensate for the effects of weather, terrain, and obstacles. During actual operations, the G2 (S2) adjusts TPLs to conform to the enemy's actual rates of movement.

Decision points must be supported by NAIs (where an asset can detect the enemy). The commander can decide to execute a planned decision based on enemy actions at a DP. If the commander does not make a decision before the enemy force passes the DP, that option is negated. Factors affecting DP placement include the time required—

- For the G2 (S2) to receive the information from the intelligence collection or reconnaissance and surveillance asset.
- To process or analyze the information.
- To advise the commander of the activity.
- To disseminate orders or instructions to the proper maneuver, FS, CS, or CSS unit or asset.
- For the unit or asset to execute the orders or instructions.

A TAI is an area or a point along a mobility corridor or an engagement area where the commander wants to mass combat power through maneuver, fires, obstacles, and or EW. The G3 (S3) develops TAIs based on the commander's intent and in coordination with the G2 (S2), FSCoord or FSO, and the electronic warfare officer. DPs often trigger maneuver, fires, or EW on a TAI. For some TAIs, the commander specifies one definite attack option, thus one DP. However, several DPs, called a DP cluster, can be designated to address several options for one TAI. Regardless of location, DPs and TAIs must be under surveillance.

The **synchronization matrix** provides a highly visible, clear method for ensuring that planners address all operating systems when they are developing courses of action and recording the results of war gaming. The matrix clearly shows the relationships between activities, units, support functions, and key events. The

synchronization matrix supports the staff in adjusting activities based on the commander's guidance and intent and the enemy's most likely course of action. The synchronization matrix is not a formal part of plans and orders. It serves as a planning tool, an internal staff product, which normally is not distributed formally to subordinate and higher headquarters. (See Figure 5-9, page 5-20.)

When used together, the synchronization matrix and the DST form a powerful graphic C^2 tool. Once a decision is made on the COA, the staff can use the

DST and synchronization matrix to assist in writing the OPLAN or OPORD. Because missions and decisions are laid out in a logical and orderly fashion, this is also a good way to ensure nothing is left out of the OPLAN or OPORD.

The staff can write an annex to the OPLAN or OPORD as an *execution matrix*. An execution matrix depicts when and where specific supporting actions must occur.

Student Handout 4

Extracted Material from FM 3-25.26

This student handout contains four pages of extracted material from the following publication:

- FM 3-25.26, Map Reading and Land Navigation, 20 July 2001
Chapter 7, pages 7-1 thru 7-4

Disclaimer: The training developer downloaded the extracted material from the General Dennis J. Reimer Training and Doctrine Digital Library. The text may contain passive voice, misspellings, grammatical errors, etc., and may not be in compliance with the Army Writing Style Program.

THIS PAGE INTENTIONALLY LEFT BLANK

CHAPTER 7

OVERLAYS

An overlay is a clear sheet of plastic or semi-transparent paper. It is used to display supplemental map and tactical information related to military operations. It is often used as a supplement to orders given in the field. Information is plotted on the overlay at the same scale as on the map, aerial photograph, or other graphic being used. When the overlay is placed over the graphic, the details plotted on the overlay are shown in their true position.

7-1. PURPOSE

Overlays are used to display military operations with enemy and friendly troop dispositions, and as supplements to orders sent to the field. They show detail that will aid in understanding the orders, displays of communication networks, and so forth. They are also used as annexes to reports made in the field because they can clarify matters that are difficult to explain clearly in writing.

7-2. MAP OVERLAY

There are three steps in the making of a map overlay—orienting the overlay material, plotting and symbolizing the detail, and adding the required marginal information (Figure 7-1).

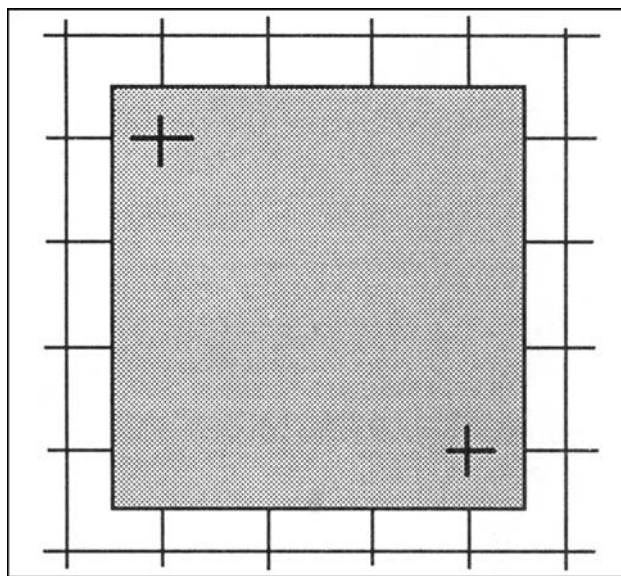


Figure 7-1. Registering the overlay.

a. **Orienting.** Orient the overlay over the place on the map to be annotated. Then, if possible, attach it to the edges of the map with tape. Trace the grid intersections nearest the two opposite corners of the overlay using a straightedge and label each with the proper grid coordinates. These register marks show the receiver of your overlay exactly where it fits on his map; without them, the overlay is difficult to orient. It is imperative that absolute

accuracy be maintained in plotting the register marks, as the smallest mistake will throw off the overlay.

b. **Plotting of New Detail.** Use pencils or markers in standard colors that make a lasting mark without cutting the overlay to plot any detail (FM 101-5-1).

(1) Use standard topographic or military symbols where possible. Nonstandard symbols invented by the author must be identified in a legend on the overlay. Depending on the conditions under which the overlay is made, it may be advisable to plot the positions first on the map, then trace them onto the overlay. Since the overlay is to be used as a supplement to orders or reports and the recipient will have an identical map, show only that detail with which the report is directly concerned.

(2) If you have observed any topographic or cultural features that are not shown on the map, such as a new road or a destroyed bridge, plot their positions as accurately as possible on the overlay and mark with the standard topographic symbol.

(3) If difficulty in seeing through the overlay material is encountered while plotting or tracing detail, lift the overlay from time to time to check orientation of information being added in reference to the base.

c. **Recording Marginal Information.** When all required detail has been plotted or traced on the overlay, print information as close to the lower right-hand corner as detail permits (Figure 7-2). This information includes the following data:

(1) **Title and Objective.** This tells the reader why the overlay was made and may also give the actual location. For example, "Road Reconnaissance" is not as specific as "Route 146 Road Reconnaissance."

(2) **Time and Date.** Any overlay should contain the latest possible information. An overlay received in time is very valuable to the planning staff and may affect the entire situation; an overlay that has been delayed for any reason may be of little use. Therefore, the exact time the information was obtained aids the receivers in determining its reliability and usefulness.

(3) **Map Reference.** The sheet name, sheet number, map series number, and scale must be included. If the reader does not have the map used for the overlay, this provides the information necessary to obtain it.

(4) **Author.** The name, rank, and organization of the author, supplemented with a date and time of preparation of the overlay, tells the reader if there was a time difference between when the information was obtained and when it was reported.

(5) **Legend.** If it is necessary to invent nonstandard symbols to show the required information, the legend must show what these symbols mean.

(6) **Security Classification.** This must correspond to the highest classification of either the map or the information placed on the overlay. If the information and map are unclassified, this will be so stated. The locations of the classification notes are shown in Figure 7-2, and the notes will appear in both locations as shown.

(7) **Additional Information.** Any other information that amplifies the overlay will also be included. Make it as brief as possible.

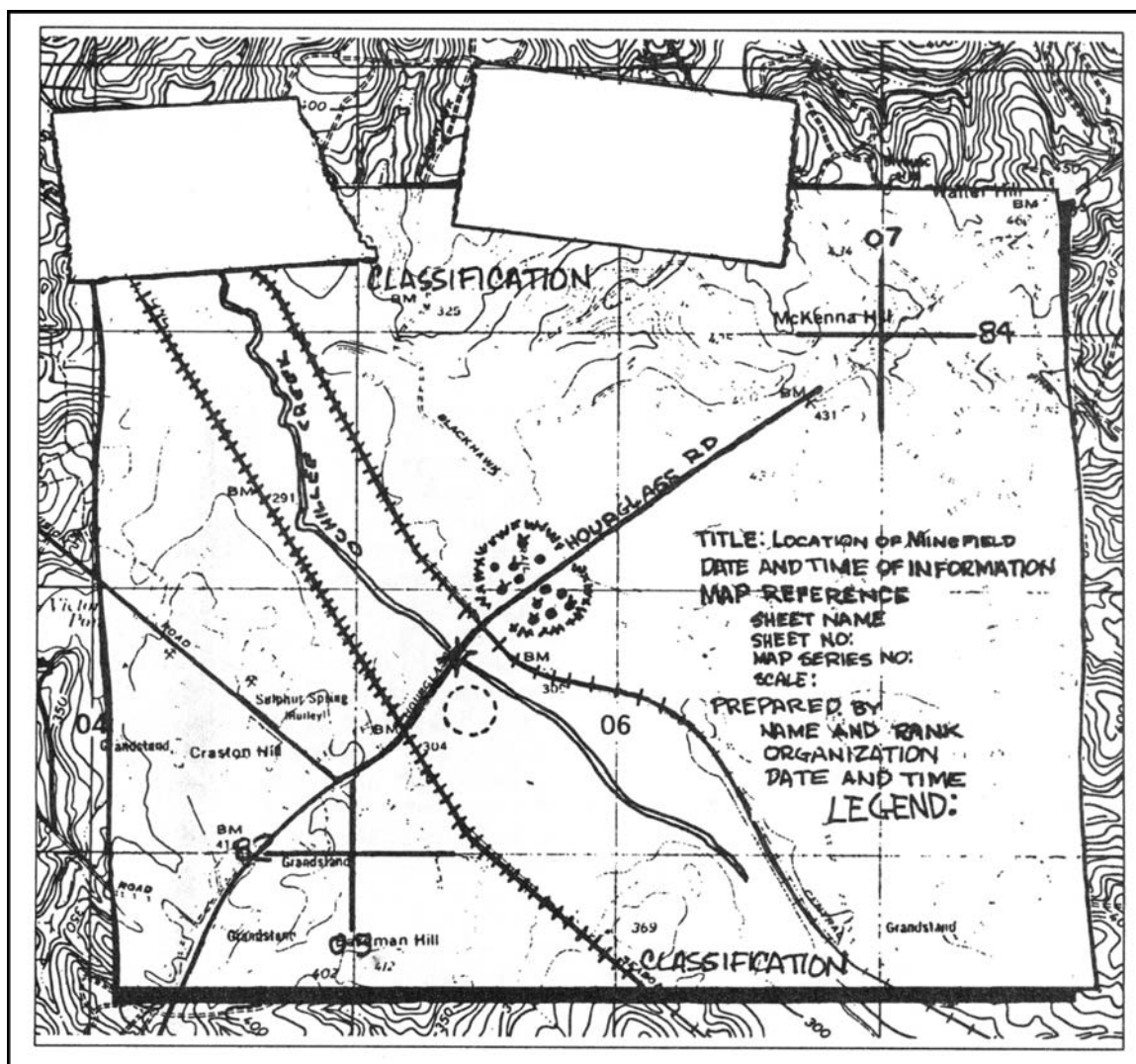


Figure 7-2. Map overlay with marginal information.

7-3. AERIAL PHOTOGRAPH OVERLAY

Overlays of single aerial photographs are constructed and used in the same way as map overlays. The steps followed are essentially the same, with the following exceptions:

a. **Orienting of Overlay.** The photograph normally does not have grid lines to be used as register marks. The borders of the photograph limit the area of the overlay, so the reference marks or linear features are traced in place of grid register marks. Finally, to ensure proper location of the overlay with respect to the photograph, indicate on the overlay the position of the marginal data on the photograph as seen through the overlay.

b. **Marginal Information.** The marginal information shown on photographs varies somewhat from that shown on maps. Overlays of photographs (Figure 7-3, page 7-4) should show the following information:

(1) **North Arrow.** This may be obtained in two ways—by comparing with a map of the area or by orienting the photograph by inspection. In the latter case, a compass or expedient direction finder must be used to place the direction arrow on the overlay. Use the standard symbol to represent the actual north arrow used—grid, magnetic, or true north.

(2) **Title and Objective.** This tells the reader why the photo overlay was made and may also give the actual location.

(3) **Time and Date.** The exact time the information was obtained is shown on a photo overlay just as on a map overlay

(4) **Photo Reference.** The photo number, mission number, date of flight, and scale appear here, or the information is traced in its actual location on the photograph.

(5) **Scale.** The scale must be computed since it is not part of the marginal data.

(6) **Map Reference.** Reference is made to the sheet name, sheet number, series number, and scale of a map of the area, if one is available.

(7) **Author.** The name, rank, and organization of the author are shown, supplemented with a date and time of preparation of the overlay.

(8) **Legend.** As with map overlays, this is only necessary when nonstandard symbols are used.

(9) **Security Classification.** This must correspond to the highest classification of either the photograph or the information placed on the overlay. If the information and photograph are unclassified, this will be so stated. The locations of the classification notes are shown in Figure 7-3, and the notes will appear in both locations.

(10) **Additional Information.** Any other information that amplifies the overlay will also be included. Make it as brief as possible.

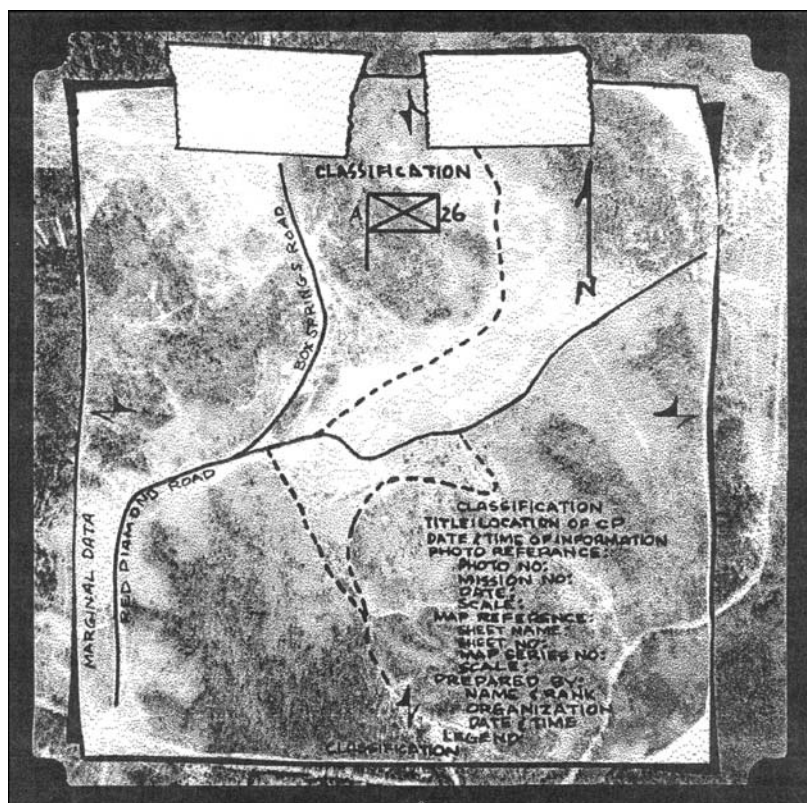


Figure 7-3. Photographic overlay with marginal information.

PRACTICAL EXERCISE SHEET PE-1

Title	GRAPHICS AND OVERLAYS						
Lesson Number/Title	W321 version 1 / GRAPHICS AND OVERLAYS						
Introduction	This practical exercise is going to give you an opportunity to exercise your understanding of Graphics and Overlays.						
Motivator	This practical exercise will allow you to become more familiar with FM 101-5-1 and its contents.						
Terminal Learning Objective	<p>NOTE: The instructor should inform the students of the following Terminal Learning Objective covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will:</p> <table><tr><td>Action:</td><td>Prepare offensive and defensive overlays for an armored or mechanized company or battalion.</td></tr><tr><td>Conditions:</td><td>As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</td></tr><tr><td>Standards:</td><td><p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--</p><ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay.<p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p></td></tr></table>	Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.	Conditions:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).	Standards:	<p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--</p> <ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay. <p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p>
Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.						
Conditions:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).						
Standards:	<p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--</p> <ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay. <p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p>						
Safety Requirements	None						
Risk Assessment Level	Low						
Environmental Considerations	None						
Evaluation	<p>This practical exercise will reinforce the instruction that you just received.</p> <p>Use FM 101-5-1 to assist you. After you finish the practical exercise, turn into instructor not later than day five, your instructor will grade and return the solution to you.</p>						

**Instructional
Lead-In**

Using the resources listed below and the information provided in the practical exercise, answer the questions and label an overlay.

**Resource
Requirements****Instructor Materials:**

- Maps required for the practical exercises, Hunfeld L 5324, Ausgabe 7-DMG, Series M 745, Scale 1-50,000
- Practical Exercise
- Acetate
- Alcohol-based pens (black, red, green as a minimum).
- Graphics template one per student.
- One map board per student.

Student Materials:

The resource requirements for this practical exercise are--

- FM 101-5-1.
 - Pen, pencil and supplies issued by the instructor.
-

**Special
Instructions**

You will utilize the current month and year for all Date Time Groups (DTG) within this practical exercise.

Procedures

Answer the following questions. You may write on this paper.

1. Outline enemy graphic control measures using _____ line when using only one color on an operations overlay.

2. When equipped with the multiple colors, you may use the color blue to indicate friendly units. (Circle One)

TRUE FALSE

3. If you use any colors other than black, red, or green, you must explain their use in the _____.

4. When depicting an "Ambush" symbol, the tip of the arrow indicates the center of mass of the ambush unit's position. (Circle One)

TRUE FALSE

5. Which of the following is NOT a rule governing building a unit symbol?
- a. Symbols must be easily distinguishable.
 - b. Friendly symbols must not use attributes that a person could confuse with enemy symbols.
 - c. Composite symbols will generally have the secondary symbol centered on or above the modifying symbol.
6. Which of the following should you use to show units forming a temporary grouping under one command?
- a. Staff
 - b. Bracket
 - c. Parenthesis
 - d. Line
7. You normally label the arrow when depicting a "Friendly Direction of Supporting Attack" on an overlay. (Circle One)
- TRUE FALSE
8. If you place a Coordinated Fire Line (CFL) on a Phase Line (PL), then you use a dash line. (Circle One)
- TRUE FALSE
9. When depicting a reinforced and reduced unit, you will use the (+, -) in field H. (Circle One)
- TRUE FALSE
10. In the space below, draw the symbol which depicts a "Follow and Support" mission for 2-35 Armor.
11. Draw the symbol for A/1-52 Inf (Bradley). The symbol shows dismounted troops.
12. In the space below, draw the symbol which depicts a proposed delaying action.

13. In the space below, draw the symbol which represents an Axis of Advance for a Feint.

**Feedback
Requirements**

None

PRACTICAL EXERCISE SHEET PE-2

Title	GRAPHICS AND OVERLAYS						
Lesson Number/Title	W321 version 1 / GRAPHICS AND OVERLAYS						
Introduction	This practical exercise is going to give you an opportunity to exercise your understanding of military symbology (Graphics and Overlays).						
Motivator	This practical exercise will give you some firsthand experience in preparing an overlay.						
Terminal Learning Objective	<p>NOTE: The instructor should inform the students of the following Terminal Learning Objective covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will--</p> <table><tr><td>Action:</td><td>Prepare offensive and defensive overlays for an armored or mechanized company or battalion.</td></tr><tr><td>Conditions:</td><td>As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</td></tr><tr><td>Standards:</td><td><p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--</p><ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay.<p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p></td></tr></table>	Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.	Conditions:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).	Standards:	<p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--</p> <ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay. <p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p>
Action:	Prepare offensive and defensive overlays for an armored or mechanized company or battalion.						
Conditions:	As a staff sergeant in a classroom environment, given FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).						
Standards:	<p>Prepared offensive and defensive overlays for an armored or mechanized company or battalion by--</p> <ul style="list-style-type: none">• Identifying, operational terms, acronyms, and abbreviations.• Identifying graphic control measures.• Identifying unit symbols.• Identifying equipment symbols.• producing a mission map overlay. <p>IAW FM 101-5 (SH-3), FM 101-5-1, and FM 3-25.26 (SH-4).</p>						
Safety Requirements	None						
Risk Assessment Level	Low						
Environmental Considerations	None						

Evaluation	<p>a. This practical exercise is for practice. This practical exercise is worth 100 points. To successfully pass, you must score at least 70 points. The following standards comprise the grading system:</p> <p>(1) Minus two (2) points for each symbol drawn incorrectly.</p> <p>(2) Minus two (2) points for each symbol labeled incorrectly.</p> <p>(3) Minus two (2) points for each symbol plotted incorrectly (+/- 100 meters).</p> <p>b. After you complete the practical exercise, the instructor will review the solution with you. The instructor will compare your overlay to the prepared solution, helping you to evaluate your understanding of the graphics and overlays lesson.</p> <p>c. The grade you receive will give you an indication on how well you did on the exercise. Use this information to prepare yourself for the examination.</p>
Instructional Lead-In	<p>Use the resources listed below and the information provided in the practical exercise to prepare an overlay.</p>
Resource Requirements	<p>Instructor Materials:</p> <ul style="list-style-type: none"> • Maps required for the practical exercises, Hunfeld L 5324, Ausgabe 7-DMG, Serie M 745, Scale 1-50,000 • Practical Exercises • Acetate • Alcohol-based pens (black, red, green as a minimum). • Graphics template one per student. • One map board per student. <p>Student Materials:</p> <p>The resource requirements for this practical exercise are:</p> <ul style="list-style-type: none"> • FM 3-25.26 (SH-4). • FM 101-5 (SH-3). • FM 101-5-1. • Hunfeld Map sheet L5324, Ausgabe 7-DMG, series M 745, scale 1:50000. • Acetate • Alcohol based pens (black, red, & green). • Graphic Templates.
Special Instructions	<p>You will utilize the current month and year for all Date Time Groups (DTG) within this practical exercise.</p>
Procedures	<p>a. You are the operations sergeant for Task Force 1-38 IN (M)(B), 2nd Bde (AR), 52 IN Div (M)(B). You must prepare an overlay using the information below. The task force is responsible for the roads that will become its Lateral Boundaries and Phase Lines.</p>

b. The information below is not in the format usually found in an operations order. The intent of this PE is to reinforce the previous instruction and to build your speed and confidence in the use of FM 101-5-1.

Coordination Points

Plot the following coordinating points:

- NB479169
- NB489208
- NB637256
- NB530157
- NB555156
- NB600179

Lateral Boundaries

a. The Task Force's West boundary separates TF 1-38 IN (M) (B), 2nd BDE and TF 2-38, 1st BDE, and follows the hard surface roads southerly from NB512277—NB499193—NB479169—NB479122.

b. The Task Force's East boundary separates TF 1-38 and TF 1-36 AR and follows the roads southerly from NB650278—NB639258—NB604208—NB600168—NB598162—NB603138—NB600090.

c. The Task Force has three Company Teams: Co Tm A in the West, Co Tm B in the center, and Co Tm C in the East.

(1) The boundary for A and B Co Teams follows the secondary roads southerly from NB525230—NB524199—NB530157.

(2) The boundary for B and C Co Teams follows the secondary roads southwesterly from NB600248—NB569209—NB555155.

Phase lines FEBA, and Rear Boundaries

a. **PL ROPE** follows the secondary roads northeasterly from--

- NB491209
- NB500228
- NB512230
- NB526230
- NB542229
- NB560234
- NB600249
- NB635257

NOTE: This phase line also serves as the Company Teams' rear boundaries.

b. **PL TWINE** follows the roads easterly from--

- NB479122
- NB532121
- NB536128

- NB552120
- NB563108
- NB600090

c. The **FEBA** runs easterly along the roads from--

- NB479169
- NB515167
- NB530157
- NB539143
- NB555155
- NB600179

Battle Positions (BP)

Co Tm A is in Battle Position 1. BP 1 coordinates are--

- NB505177
- NB519173
- NB509168
- NB499169
- NB494175
- NB499178
- NB505177

NOTE: Connect these points BP 1 orients towards Hilltop 305, NB502153

Co Tm B is in Battle Position 2. BP 2 coordinates are--

- NB545161
- NB553168
- NB549152
- NB539152
- NB533159
- NB535163
- NB542162
- NB545161

NOTE: Connect these points. BP 2 orients toward the town of HUNFELD, NB540145.

Co Tm C is in Battle Position 3. BP 3 coordinates are--

- NB579179
- NB582176
- NB578171
- NB559161
- NB558166
- NB565172
- NB568174
- NB579179

NOTE: Connect these points. BP 3 orients toward the town of MOLZBACH, NB567130.

3d Platoon, Co Tm C is in Platoon Battle Position 4. BP 4 coordinates are--

- NB596186
- NB599185
- NB599182
- NB594178
- NB589178
- NB589180
- NB592182
- NB596186

NOTE: Connect these points. BP 4 orients toward the road intersection at NB603147.

Co Tm C established a prepared battle position for future occupation (proposed) at--

- NB604227
- NB613223
- NB599218
- NB589223
- NB599228
- NB604227

NOTE: Connect these points. This is Battle Position 5. BP 5 (P) orients towards NB600210.

Areas

Assembly Area (AA): AA HEMP is inside the area enclosed by the following grids--

- NB549228
- NB555228
- NB559218
- NB549208
- NB539207
- NB539217
- NB549228

NOTE: Connect these points.

Miscellaneous

A scatterable antitank minefield is in a box outlined by grids--

- NB489160
- NB499160
- NB499158
- NB489158

NOTE: The self destruct DTG is 060800Z.

There is a Registered Point Target, AG7001 at NB509148.

The 52d IN Div (M)(B) has established the FSCL along Phase Line TWINE effective 060400Z-140600ZOCT00.

The Scout Platoon of TF 1-38 (M) (B) is screening along the north side of Phase Line TWINE.

Friendly Unit Locations

- a. The 1st Squad, 2d Platoon, Co Tm C, is occupying an LP/OP at NB588148.
- b. Co Tm A Headquarters, TF 1-38 (M) (B), is at NB500174.
- c. Co Tm B Headquarters, TF 1-38 (M) (B), is at NB539158.
- d. Co Tm C Headquarters, TF 1-38 (M) (B), is at NB573170.
- e. 1st Section, 2d Platoon, C Company, 52 MI Battalion has set up a ground surveillance radar (GSR) position at NB533171.
- f. 2d Bde (AR) (B), 52d ID (M) (B), TAC CP is at NB546218, collocated with TF 1-38 (M) (B), TOC CP.
- g. B Company, 52d Combat Engineer Battalion (M) is at NB583262.
- h. B Battery, 1-41 FA (SP) is at NB529239.
- i. There is an Ammunition Transfer Point (ATP 3) at NB568268 serviced by 2nd BDE.
- j. TF 1-38 Battalion Aid Station is at NB509238.

Enemy Unit Locations

The 18th Motorized Infantry Regiment is near NB549077.

Feedback Requirements

None

HANDOUTS FOR LESSON 1: W322 version 1

**This Appendix
Contains**

This appendix contains the items listed in this table--

Title/Synopsis	Pages
SH-1, Advance Sheet	SH-1-1 and SH-1-2

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 1

This student handout contains the Advance Sheet.

THIS PAGE INTENTIONALLY LEFT BLANK

Student Handout 1

Advance Sheet

Lesson Hours This lesson consists of 3 hours of small group instruction and a 2 hour practical exercise.

Overview This 5 hour lesson covers the techniques, procedures, and formats you must master in order to prepare and issue combat orders.

Learning Objective Terminal Learning Objective (TLO):

Action:	Prepare plans, orders, and annexes.
Condition:	As a squad leader/staff NCO in a company or battalion level unit.
Standard:	Prepared plans, orders, and annexes by-- <ul style="list-style-type: none">• Recognizing the uses of the different types of combat orders.• Preparing an operations order. IAW FM 101-5, Chapters 4, 5, 6 and App F, and H.

ELO A Recognize the uses of the different types of combat orders.

ELO B Correct an operations order.

Assignment The assignments for this lesson are--

- Study FM 101-5, App F and App H.
 - Read FM 101-5, p 4-2 thru 4-5, 4-12, and 5-3 thru 5-27.
 - Read FM 101-5, Chapter 6.
 - Complete practical exercise.
-

Additional Subject Area Resources FM 101-5-1, Operational Terms and Symbols.

Bring to class You must bring the following items to class:

- All reference material received for this class.
 - Writing material.
-

THIS PAGE INTENTIONALLY LEFT BLANK

PRACTICAL EXERCISE SHEET PE-1

Title	COMPLETE A OPERATION ORDER (OPORD)						
Lesson Number / Title	W322 version 1 / PLANS, ORDERS AND ANNEXES						
Introduction	None						
Motivator	This practical exercise will reveal how well you understand Plans, Orders, and Annexes. Your understanding of today's doctrine will greatly enhance your ability to assist in the planning and execution of Plans, Orders, and Annexes.						
Terminal Learning Objective	<p>NOTE: The instructor should inform the students of the following Terminal Learning Objective covered by this practical exercise.</p> <p>At the completion of this lesson, you [the student] will:</p> <table><tr><td>Action:</td><td>Prepare plans, orders, and annexes.</td></tr><tr><td>Conditions:</td><td>As a squad leader/staff NCO in a company or battalion level unit.</td></tr><tr><td>Standards:</td><td>Prepared plans, orders, and annexes by:<ul style="list-style-type: none">• Recognizing the uses of the different types of combat orders.• Preparing an operations order.IAW FM 101-5, Chapters 4, 5, 6 and App F, and H.</td></tr></table>	Action:	Prepare plans, orders, and annexes.	Conditions:	As a squad leader/staff NCO in a company or battalion level unit.	Standards:	Prepared plans, orders, and annexes by: <ul style="list-style-type: none">• Recognizing the uses of the different types of combat orders.• Preparing an operations order. IAW FM 101-5, Chapters 4, 5, 6 and App F, and H.
Action:	Prepare plans, orders, and annexes.						
Conditions:	As a squad leader/staff NCO in a company or battalion level unit.						
Standards:	Prepared plans, orders, and annexes by: <ul style="list-style-type: none">• Recognizing the uses of the different types of combat orders.• Preparing an operations order. IAW FM 101-5, Chapters 4, 5, 6 and App F, and H.						
Safety Requirements	None						
Risk Assessment	Low						
Environmental Considerations	None						
Evaluation	This is not a graded PE. There will be a group discussion of the solutions to clarify any questions.						
Instructional Lead-In	This practical exercise will give you some good practice at ensuring orders are in The correct format.						
Resource Requirements	<p>Instructor Materials:</p> <ul style="list-style-type: none">• FM 101-5.• FM 101-5-1. <p>Student Materials:</p> <ul style="list-style-type: none">• Pen or pencils and writing paper.• Reading material listed on the Advance Sheet.						
Special Instructions	None						

Procedures

Situation. You are a member of the battle staff for the 1st Bde (M), 52d IN DIV (M)(B), 2d (US) Corps. The time is 231200Z July XXXX. SGT Lacey just finished printing the Bde OPORD 4-XX, but the computer failed to print some of the OPORD information and format headings. The brigade S-2 transmitted a FRAGO at 1000 hours to the battalion/task forces to begin reconnaissance of the axis of advance. Your brigade is being serviced by the 521st Forward Support Battalion. There are no changes from the oral orders. A/521 ENGR BN will provide direct support throughout the mission in support of 1st Bde (M). A/1-441 ADA BN will provide general support to the 1st Bde (M) to allow freedom of maneuver on the battlefield.

Requirement. Complete OPORD 4-XX (see pages PE-1-3 thru PE-1-9) by filling in the blanks next to the bracketed numbers. The commander, COL Stevenson will return in one hour to sign the order.

Hint. Use the following reference to help you complete this PE: FM 101-5, App F and H.

NOTE: For this PE, Annexes are listed in the appropriate places in the OPORD; however, you are only provided with Appendix 1 (Intelligence Preparation of the Battlefield) ANNEX B (Intelligence Overlay) (see page PE-1-10) and to ANNEX C (Operation Overlay) (see page PE-1-11) as part of the PE. You do not need the other annexes to complete this PE.

The grid zone designation for this practical exercise is NB.

When answering blanks dealing with grid coordinates locate the point to the nearest 1,000 - meter (4-digit grid).

(Classification)
(No change from oral orders)

Copy _____ of _____ copies
(1) _____, 52d IN DIV (M)(B)
EICHENAU (NB3720720), GE
231300Z July XXXX
XT

OPERATION ORDER (2) _____

References: (3) _____, Series M745 (WESTERN EUROPE); Sheets L5324 (HUINFELD), L5322 (LAUTERBACH), L5524 (FULDA), L5522 (HERBSTIEN), Edition AUSGABE 5-DMG, 1:50,000.

Time Zone Used Throughout the Order: ZULU

(4) _____:

TF 1-2 (AR)

1-2 (AR) (-)
D/1-77 IN (M)(B)
2/A/1-441 ADA
2/A/521 ENGR

Arty
1-40 FA (155 SP)

(5) _____
1-77 IN (M)(B)(-)
C/1-2 (AR)
1/A/1-441 ADA
1/A/521 ENGR

BDE Troops
A/1-52 Atk Hel
A/1-441 ADA BN (GS) (-)
A/521 ENGR BN (DS) (-)
TM A/52 MI
2/52 Chem Co (DECON)

1-3 (AR)

3/A/1-441 ADA
3/A/521 ENGR

Support Battalion
(6) _____

1. SITUATION

a. (7) _____. Annex B (8) _____. The enemy forces opposing our brigade are part of the 695th Motorized Rifle Regiment (MRR). This regiment is subordinate to the 31st Motorized Rifle Division (MRD). The 312th Tank Regiment (TR) appears to be the reserve for the 31st MRD. Companies of the 695th MRR are currently positioned along the east side of Highway B27(FEBA Line) from NB5315 to NB5005. (Appendix 1 [Initial Intelligence Preparation of the Battlefield] to Annex B [Intelligence]). If pressed, the enemy could withdraw to defensive positions along PL GOLD and reinforce with units of the 9th Tank Division (TD) (Tab B [Enemy Situation Template] to Appendix 1). The enemy will likely defend along our front to maintain control of key terrain. Early morning fog will assist our attack. Terrorists may attempt to kidnap or assassinate key leaders within the brigade.

b. (9) _____.

(Classification)

(Classification)

OPORD 4-XX-1st Bde (M)

(1) 2nd Corps is conducting offensive operations at 240240Z July XXXX to reestablish the FEBA along PL GOLD from NB555289 to NA565872. It is the Corps Commander's intent to attack with two divisions abreast to gain control of key terrain and destroy all enemy elements between our current positions and PL GOLD. On order, we will continue the attack east and establish defensive positions along PL BRASS from NB639289 to NA636876. The success of this operation relies heavily on a synchronized attack of the two divisions.

(2) 52d ID (M) (B) attacks 240240Z July XXXX to secure PL GOLD from NB555289 to NB5405 with three brigades abreast (1st Bde (M) in the south, 2d Bde (AR) in the center, and 3d Bde (M) in the north). The Division Commander's intent is to conduct a synchronized attack and to destroy all enemy elements between our current positions and PL GOLD. On order, the division continues to attack east to PL BRASS and establish defensive positions.

(3) 2nd BDE (AR) on our left flank, attacks 240240Z July XXXX to secure PL GOLD from NB5621 to NB5615.

(4) 25 AD on our right flank, attacks 240240Z July XXXX to secure PL GOLD from NB5405 to NA5687.

(5) 3/209th ACR is the **(25) screening force**.

c. **(10)** _____. (See Task Organization).

2. MISSION. **(11)** _____ attacks 240240Z July XXXX in sector to secure PL GOLD **(12)** (NB _____ to **(13)** NB _____). On order, continue the attack east to secure PL BRASS (NB639146 to NB636054) and establish defensive positions along PL BRASS.

3. **(14)** _____.

Intent. 1st Bde (M) attacks, in sector, with two Task Forces and one Battalion abreast to secure PL GOLD. A/1-52 Atk Hel will serve as the brigade reserve. My intent is to destroy all enemy elements between our current positions and PL GOLD. Seizing and controlling key terrain is my primary objective, while denying the enemy information on our true size and objectives. On order, we will continue to attack east to PL BRASS.

After securing PL BRASS we will set up in defensive positions that allow no penetration of second-echelon enemy forces beyond PL BRASS.

a. **(15)** _____. See Annex C **(16)** _____.

(1) **(17)** _____. 1st Bde (M) attacks in sector to secure PL GOLD with **(18)** _____ in the north, **(19)** _____ in the center, and **(20)** _____ in the south. A/1-52(AHB) is the brigade reserve. TF 1-77 IN (M)(B) will conduct the main attack on OBJ **(21)** _____ (NB5410) while TF 1-2 (AR) and 1-3 (AR) conduct supporting attacks on OBJs **(22)** _____ (NB5513) and **(23)** _____ (NB5407) respectively. On order, the brigade continues the attack to the east to secure PL BRASS. TF 1-77 IN (M)(B) will conduct the main attack on OBJ IROQUOIS (NB6210) while TF 1-2 (AR) and 1-3 (AR) conduct supporting attacks on OBJs KIOWA (NB6313) and ARAPAHO (NB6207) respectively.

(Classification)

(Classification)

OPORD 4-XX-1st Bde (M)

Once PL BRASS has been secured, the brigade will establish defensive positions to prevent penetration of second-echelon enemy forces beyond PL BRASS. Security forces will be used to defeat hostile forces and deceive, delay, and disorganize enemy forces until main forces arrive. Focus of deep operations is to identify and locate first-echelon regiments of the lead Tank Division. Elements of the Bde reserve and the 521st FSB are responsible for Combat Level III threats in the rear.

(2) **(24)** _____. Priority of FA and CAS initially to TF 1-77 IN (M)(B), then to 1-3 (AR) and TF 1-2 (AR), on order. Task forces will plan a 10-minute conventional preparation. The Brigade Commander is final approval authority for all FASCAM missions.

b. **(25)** _____.

(1) **(26)** _____

(a) Attack in sector 240240Z July XXXX to secure PL GOLD **(27)** (NB _____ to NB558129) and seize OBJ **(28)** _____ (NB5513).

(b) On order, continue the attack to secure PL BRASS (NB639146 to NB638117) and seize OBJ KIOWA (NB6313).

(c) On order, establish defensive position along PL BRASS vic NB6313.

(2) **(29)** _____

(a) Attack in sector 240240Z July XXXX to secure PL GOLD (NB558129 to NB550090) and seize OBJ **(30)** _____ (NB5410).

(b) On order, continue the attack to secure PL BRASS (NB638117 to NB640083) and seize OBJ IROQUOIS (NB6210).

(c) On order, establish defensive position along PL BRASS vic NB6210.

(3) **(31)** _____

(a) Attack in sector 240240Z July XXXX to secure PL GOLD (NB5509 to **(32)**NB _____) and seize OBJ **(33)** _____ (NB5407).

(b) On order, continue the attack to secure PL BRASS (NB640083 to NB636054) and seize OBJ ARAPAHO (NB6207).

(c) On order, establish defensive position along PL BRASS vic NB6207.

(4) A/1-52 (ATK-HL) is the **(34)** _____. On order, conduct a supporting attack on OBJ SIOUX.

c. Task to combat support units.

(1) **(35)** _____. See Annex D (Fire Support).

(Classification)

(Classification)

OPORD 4-XX-1st Bde (M)

(a) Air support. 1st Bde (M) sortie allocation (for planning) is 30 sorties daily, 23-28 July XXXX. Daily allocation of sorties for planning:

1 TF 1-2 (AR): 8 sorties daily.

2 TF 1-77 IN (M)(B): 12 sorties daily.

3 1-3 (AR): 10 sorties daily.

(b) Field artillery support. Priority of fires initially to TF 1-77 IN (M)(B), then to 1-3 (AR), on order. Counterfire priorities, in order: enemy mortars and FA affecting attack, defensive positions, and command and control facilities.

(c) Naval gunfire support. None

(d) Fire support coordinating measures.

1 2d Corps FSCL in PL BRASS, effective 232200Z July XXXX.

2 52d IN DIV (M)(B) CFL in PL GOLD, effective **(36)** _____.

(2) **(37)** _____. Protect, in priority order: maneuver forces, artillery, command posts, and combat service support elements.

(3) **(38)** _____. Priority of mobility missions initially to TF 1-77 IN (M)(B), then to 1-3 (AR), on order. Engineers have mission to prepare countermobility minefields upon securing PL BRASS.

(4) **(39)** _____. See Annex B (Intelligence).

(5) **(40)** _____. See **(41)** _____.

d. **(42)** _____.

(1) OPORD 4-XX is effective **(43)** _____.

(2) Commander's critical information requirements (CCIR)

(a) Priority intelligence requirements (PIR).

1 If attacked, will the enemy withdraw to defensive positions along PL GOLD?

2 Where is the enemy main effort?

3 Where is the location of the 312th Tank Regiment?

(Classification)

(Classification)

OPORD 4-XX-1st Bde (M)

(b) Essential elements of friendly information (EEFI).

1 Location of reserve forces.

2 Location of Bde TAC and TOC CPs.

3 Location of FA BN CP.

(c) Friendly force information requirements (FFIR).

1 TF 1-2 (AR) has 90% personnel and equipment.

2 TF 1-77 IN (M)(B) has 97% personnel and equipment.

3 1-3 (AR) has 92% personnel and equipment.

(3) **(44)** _____.

(a) PL **(45)** _____ (NB510148 to NB501056) is the LD/LC.

(b) Mission-oriented protective posture is MOPP 2.

(c) Operational exposure guidance (OEG): moderate.

(4) Rules of engagement (ROE). Annex E (Rules of Engagement).

(5) Environmental considerations. None.

4. **(46)** _____.

a. Support concept. Annex **(47)** _____. Support as far forward as possible. Priority of maintenance to TF 1-77 IN (M)(B), then to 1-3 (AR), on order.

b. **(48)** _____.

(1) Class I. Supply point distribution for all units supported by BSA (NB3510) from 240001Z July XXXX through 242359Z July XXXX only. All units maintain two rations per soldier during period 230001Z July XXXX through 292359Z July XXXX.

(2) Class II. Priority of Class II to TF 1-77 IN (M)(B) for period 230001Z July XXXX through 242359Z July XXXX.

(3) Class III. Bde fuel distribution point is located at **(49)** (NB_____).

(4) Class V. ASP(1) (NB3511) and ASP(2) **(50)** (NB_____). Controlled supply rate for period 230001Z July XXXX through 282359Z July XXXX:

81MM mortar WP5
4.2 in mortar HE60
155MM How FASCAM30
Guided Missile, SA, TOW25

(Classification)

(Classification)

OPORD 4-XX-1st Bde (M)

c. Medical evacuation and hospitalization. 817th CSH (NB271091); 85th MASH (NB362072). Units must complete current cholera and typhus inoculations prior to 232200Z July XXXX.

d. Personnel support.

(1) During period 230001Z July XXXX through 282359Z July XXXX, submit personnel daily summary (PDS) to Bde S-1 NLT 1800. Use time as of 1500 hours for reporting.

(2) Brigade (51) _____ is located NB426106.

5. (52) _____.

a. (53) _____.

(1) Division CP located at NB301178; displace to NB460171 on order.

(2) Bde Main CP vic EICHENAU (NB372072); displace to NB505099 on order.

(3) (54) _____ at NB448090; displace to NB539081 on order.

(4) Bde Rear CP at NB3008; displace to (55) NB _____ on order.

(5) (56) _____ Main CP (NB471133) is the alternate Bde Main CP.

(6) (57) _____ Main CP (NB480099) is the alternate Bde TAC CP.

(7) (58) _____ Main CP (NB474062).

b. (59) _____.

(1) SOI index 7-XX in effect.

(2) Red smoke for marking of MEDEVAC helicopters only.

(60) _____:

(61) _____
(62) _____

(63) _____:

/S/
MARSHALL
S-3

(Classification)

(Classification)

OPORD 4-XX-1st Bde (M)

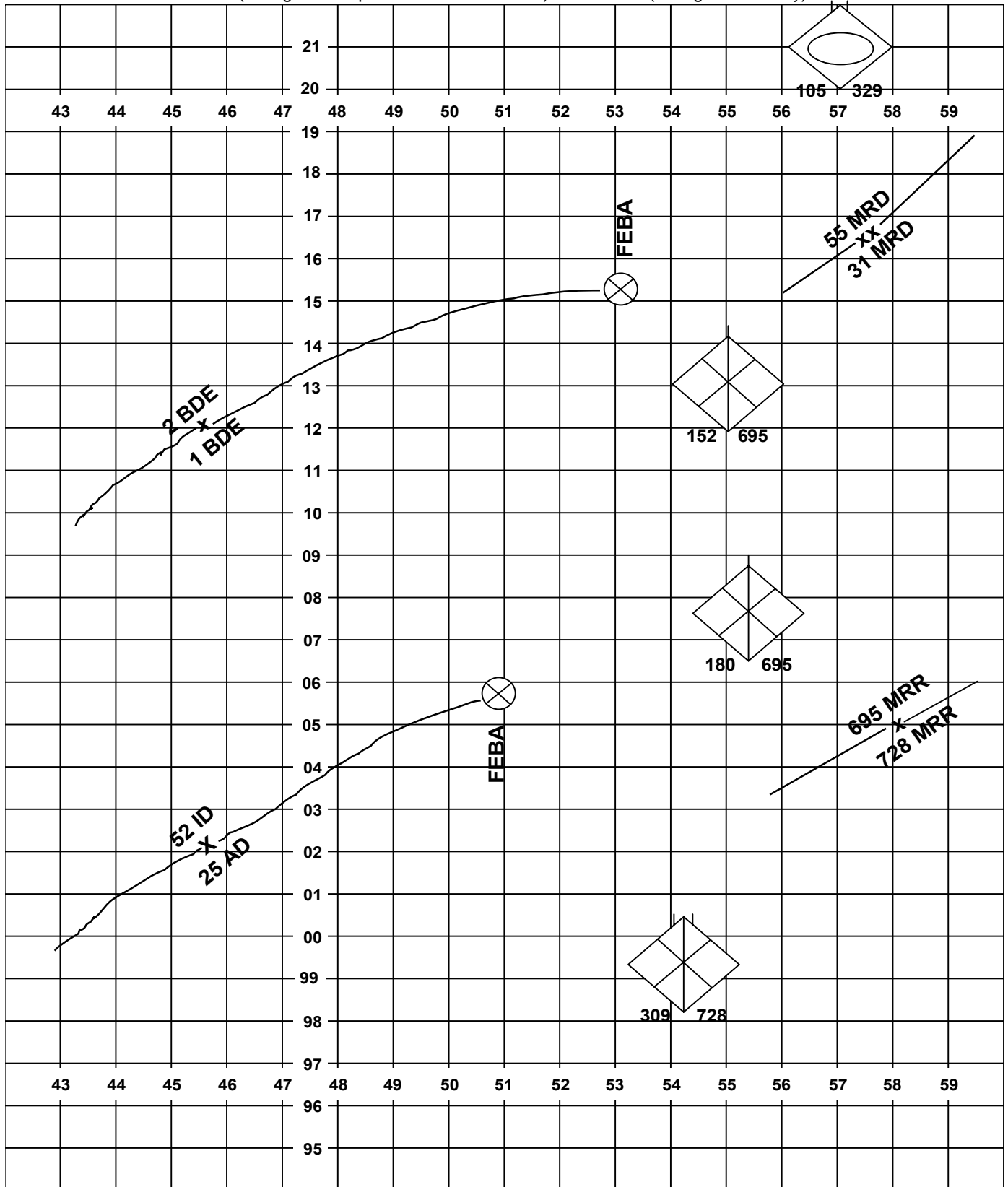
(64) _____: A (65) _____
B (66) _____
C (67) _____
D (68) _____
E (69) _____
F Not Used
G Not Used
H Not Used
I (70) _____
J (71) _____
K Not Used
L Not Used
M Not Used
N Not Used
O Not Used
P Not Used
Q Not Used
R Not Used
S Not Used
T Not Used
U Not Used
V Not Used

(72) _____: A

(Classification)

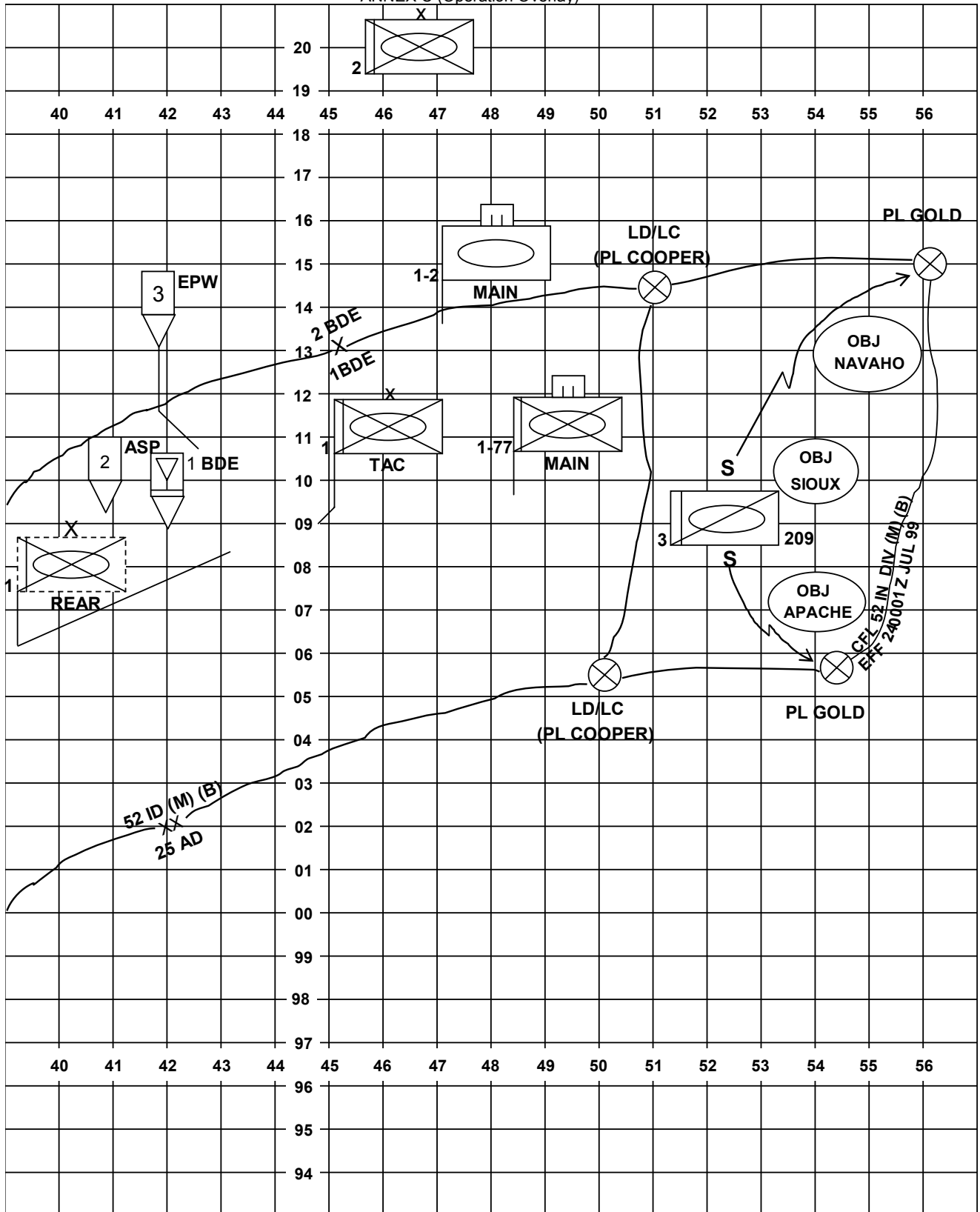
(Classification)

APPENDIX 1 (Intelligence Preparation of the Battlefield) to ANNEX B (Intelligence Overlay)



(Classification)

ANNEX C (Operation Overlay)



(Classification)

THIS PAGE INTENTIONALLY LEFT BLANK